DAILY METAL REPORTER
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In This Issue

WORLD METAL SUPPLY, DEMAND AND PRICE STABILIZATION
(Part II)
By DR. J. DUNN, Formerly Minerals Advisor to Australian Gov't

BRITISH METAL MARKETS
By L. H. TARRING
London, England

DOMESTIC METAL MARKET REVIEW

WASHINGTON REPORT

METAL STATISTICS

JUNE
1960

They Prescribed *Al* . . .

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Nine zinc die castings make up the greater part of this aspirin dispenser. As a result, the mechanism is dependable, durable, and resistant to atmospheric conditions found anywhere.

All slot machines have one common denominator. While manufacturing costs should be low, coin in the slot dispensers must "deliver the goods"—faithfully and consistently. This pre-supposes that the mechanism be durable enough to withstand the wear and tear of constant handling by people, not all of whom are gentle. It is not surprising therefore, to find that most of the working parts of such dispensers are die cast. The aspirin dispenser shown at left is typical. Inside the housing sections are two multi-barreled containers which hold the capsules of aspirin tablets. Each of these segments is approximately 4" long and contains 15 tubes. The two container castings must match exactly to insure smooth feeding of the contents across the joint.

Originally the parts were designed as aluminum die castings. The change to zinc was necessary because of the inability of the die casters consulted to produce the multi-barreled storage sections with sufficiently straight sides so that boring operations could be eliminated. As precision-cast in zinc only the simplest machine work is needed to finish the parts. A few holes are drilled to accommodate self-tapping screws, and a slot cut in the bottom storage section to accept the delivery mechanism. Had these parts been made by any other method, many more—and costly—operations would have been necessary to finish them.

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Two LINE *Editorials*

Some of the Democratic leaders are expressing fears that the convention hall in Los Angeles may become overheated. One way to prevent this would be to take steps to cut down on the production of hot air.

* * *

Friends of Mr. Rockefeller say he would accept the Presidential nomination if drafted — and he acts like a man who would draft mighty easy.

* * *

Mr. Kennedy started the world by his allegation that 17,000,000 people in the United States go to bed hungry every night, but failed to specify how many million of these are people on a diet and never get enough to eat.

* * *

A swanky resort hotel, announcing that its rates have been reduced from $120 a day to $60, says: "Stay two weeks and save $840." But why be a piker; why not stay a year and save $21,900?

* * *

Some times it does seem that we might postpone our exploration of other planets until we have more satisfactorily solved more of the problems of this one.

* * *

The president of the New York Stock Exchange warns inexperienced investors against the dangers of "gullibility and greed." As a matter of fact, gullibility and greed would not seem to be especially valuable characteristics for even experienced investors.

Washington Report

June 17, 1960

LEAD and zinc legislation seems to have more lives than the proverbial cat. Several times a pending subsidy bill appeared to be dead and then was resurrected. In the latest rescue, the House Rules Committee first denied a rule to the subsidy measure (H.R. 8860) proposed by Rep. Ed Edmondson (Dem., Okla.), by a tie vote which apparently killed the bill. However, a subsequent reconsideration achieved a seven-to-five margin to clear the bill for House action. Similar legislation has been offered in the Senate, which is expected to go along with any measure passed by the House. However, the Adminstration is opposed to any subsidies and this view ultimately may prevail.

As approved for House consideration, the bill would provide subsidy payments to lead and zinc producers whose production in metallic content of their ore was 2,000 tons per year or less. It would be a five-year emergency program which would not include anyone entering the lead and zinc producing industry after it is enacted.

Subsidy payments to individual producers would equal their profit if lead were selling at 17c per pound and zinc at 14½c a pound. A limit of $4,840,000 per year would be set on the subsidy payments.

Metal Tariffs on Agenda

Following disposal of the lead and zinc controversy, the next major action in the metals arena is expected when the question of tariff concessions comes up. U.S. ferrous and nonferrous metals and minerals will figure prominently in the forthcoming negotiations on tariffs under the General Agreement on Tariffs and Trade (GATT) in Geneva, Switzerland, next September.

The Committee for Reciprocity Information will open hearings July 11 to hear any objections to any proposed changes in U. S. atriffs. Applications for oral presentation of Views and information should be made to the committee no later than June 27.

The U. S., at the Geneva negotiations, will seek to get as many trade concessions as possible in an effort to increase exports from this country. The administration has two lists of metal-minerals: on one it will grant concessions and on the other it hopes to win concessions.

It would appear that the list on which the U. S. will grant concessions has been subjected to domestic protectionist pressure. For example, lead, zinc and fluorspar items will not be on the list. Tentatively, the list on which U. S. tariff concessions might be granted covers about 58 per cent of U. S. metal-mineral imports, and includes:

Antimony oxide; cobalt oxide; magnesium compounds and salts; mica; graphite; vanadium; molybdenum ore, concentrates and alloys; tungsten alloys; iron or steel sheets; steel ingots; aluminum scrap; metallic magnesium alloys and scrap, and nickel and alloys.

Items on the list which the U. S. will seek more favorable tariffs from foreign countries in order to boost such U. S. exports, include, iron and steel mill products; fabricated steel products; aluminum ores, concentrates, scrap and semifabricated forms; copper ores, concentrates, scrap and semifrabricated forms; brass and bronze scrap and semifabricated forms; colbalt; molybdenum; titanium; tungsten; vanadium pentoxide, and all types of construction, excavating, mining and related machinery.

Senate Votes Tin Purchase

Back on the legislative front, the Senate has passed a bill opposed by the Eisenhower Administration to set up a ten-year program of Government purchases of domestic tin at premium prices.

The Department of Interior in a report opposing the bill, said the only known source of tin ore of any consequence in the United States or its possessions is in Alaska.

The measure would require the purchase of up to 10,000 long tons over a ten-year period at prices described by the department as substantially in excess of the current market price.

However, the Senate Interior Committee report on the bill said that in addition to encouraging domestic production of tin it would provide employment in Alaska and thus help to end "huge expenditures of unemployment insurance funds" in the state.

Stockpiles' Value Rises

Value of the Federal Government's stockpile rose in April. The cost value of materials in nine Federal stockpile inventories as reported by the Department of Agriculture, General Services Administration and the Office of Civil and Defense Mobilization, on April 30, 1960, totaled $15,928,426,000, according to Senator Harry F. Bryd (Dem., Va.), chairman of Joint Committee on Reduction of Nonessential Federal Expenditures. April activity in these stockpiles resulted in a net increase of $325,352,000.

Strategic and critical materials are shown in six inventories totaling $8,500,000,000, including the $6,200,000,000 national stockpile for which itemized detail is classified. Combined figures from the other five inventories show materials (in all grades and forms) leading in cost value as follows:

Aluminum, bauxite, etc., with 6,000,000 tons at a cast of $458,,000,000; tungsten, with 84,000,000 pounds at a cost of $341,000,000; and manganese and manganese ores, with 4,400,000 tons at a cost of $295,000,000.

Name Metal Officials

Secretary of the Interior Fred A. Seaton announced the apointment of Oscar W. Bilharz as director of the Office of Minerals Mobilization. Mr. Bilharz had been serving as acting director of the Office of Minerals Mobilization since the retirement of Spencer S. Shannon on December 31, 1959.

D. Wilmot, for many years an officer of the Aluminum Company of America, was designated assistant director for mobilization planning, Aluminum and Magnesium Division, Business and Defense Services Administration, U. S. Department of Commerce. Frederick A. Weiss, superintendent of Industrial and labor relations in the Baltimore, Md., Works of the Eastern Electric Co., was named assistant director for mobilization planning in the Copper Division of BDSA.

BUSINESS IN MOTION

To our Colleagues in American Business . . .

The rapid development of the modern submersible water pump has resulted in the development of new applications for old metals.

Recently one of Revere's Technical Advisors was called in by a prominent manufacturer of this type pump for consultation regarding the diffuser casing which is a working part located in the interior of their pump used in deep and shallow wells. It was made of a ferrous metal and, while it functioned satisfactorily as a part, it proved difficult to fabricate. In addition, tool life was alarmingly short. After studying the problem in cooperation with the manufacturer's engineers, and consulting with the Revere Mills, Revere cartridge brass strip of a certain temper was recommended.

Samples were submitted, and after extensive tests approved for the part. The customer has found that not only does the diffuser casing, made of Revere Brass, perform well in the pump, but it also has superior drawing properties, is more easily worked, and tool life has been substantially increased.

This meticulous attention to "fitting the metal to the job" also resulted in this manufacturer's specifying Revere seamless leaded brass tubing for the upper body shell of its submersible pumps. Here the application called for extremely close straightness and roundness control which meant special attention to detail on the part of the Revere Mills.

You have just read of two more examples of the vital importance of selecting the metal that is not only satisfactory from a functional standpoint but one that is equally satisfactory from a production standpoint. For, what may be saved on one hand can very well be lost on the other, if the metal is not properly balanced to fit the conditions met, both in use and in fabrication.

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World Supply, Demand and

Price Stabilization for Metals

(Part 2)

By DR. DUNN, Formerly Minerals Economic Advisor to Australian Government

DURING recent years the wide fluctuations in prices of some of the basic commodities of industry has turned the thoughts of many once again to the international stabilization of prices. The problem is, of course, not new to the base metal industry; attempts to restrain price movements have been made from time to time during the past half century. However, it provides a fitting topic for discussion at this Twelfth International Congress of Scientific Management.

The development of industry, as we know it today, has been basically dependent on the inorganic raw materials — the minerals. Without their utilization, no country could have advanced beyond the peasant stage; they will continue to provide the basis for development in the future. The great industrial centers of the world — Europe, the United Kingdom, and the United States — were founded on domestic resources of such important minerals as coal, iron ore, and the base metals. But, as some of their domestic resources became depleted, these great industrial centers have become increasingly dependent on mineral supplies from less-developed regions. Export revenue from certain important mineral commodities has a dominant role in the economic welfare of many under-developed countries. In these countries, economic stability may be closely related to the maintenance of price and tonnage of mineral exports, and plans for development may be jeopardized by sharp falls in oversea earnings from these raw materials. On the other hand, the balances of payment of the great importing countries may be seriously disturbed during periods of shortage when prices of raw materials may rise unduly.

That is the broad international outlook. In addition, the individual producer and consumer would prefer some stability of prices, provided the price levels were reasonable according to his way of thinking. The producer naturally desires to plan ahead with some degree of assurance that his production will be profitable; but, the knowledgeable producer deprecates undue rises in prices, as he appreciates that they pave the way for competition from substitutes to his product. The manufacturer may deprecate wide upward fluctuations in the price of his raw materials, particularly if they form an important part of the cost of his finished commodity; they add to his programming and marketing difficulties.

These general thoughts have been voiced often enough by industry in the past, and particularly during the last two years since the prices of some raw materials tumbled from the excessive heights which they had attained in previous years. Perhaps the fall would appear in different perspective were it appreciated that today's lower level of prices may approximate to the "norm" (if one can accept a "norm" of prices) and that the previous high level was abnormal. Maybe our concern should be less with price fluctuations in general than with excessive upward price movements — but such an approach would be quite unpallatable to many.

EDITOR'S NOTE

Last month, because of their special timeliness, METALS published the concluding remarks of Dr. Dunn's paper delivered at the 12th International Congress of Scientific Management in Melbourne, Australia, on March 1, 1960. We now are publishing the remainder of his address.

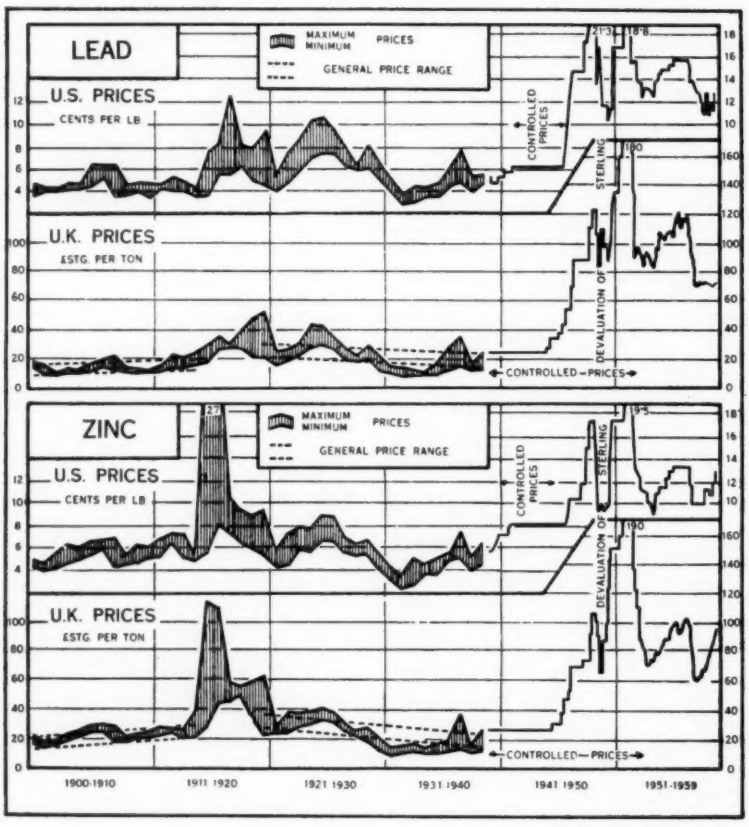
Apart from the general uptrend in price related to inflation, common to all minerals except gold, the prices of few of the 80 to 100 mineral raw materials of indusrty have fluctuated sharply in the past, in either their domestic or their overseas markets. The fuels, coal and petroleum, have generally shown a remarkable price steadiness. Prices of aluminum and iron and steel have also remained relatively stable for long periods — as also their raw materials, bauxite and iron ore. In relation to the mineral industry, the background of discussion on price stabilization is concerned with a few commodities which are important in international trade — manganese and tungsten ores, and the base metals, copper, lead, zinc and tin.

This discussion is limited to the problems of price stabilization of the base metals in international trade.

Base Metals and the LME

The four base metals—copper, lead, zinc and tin—are amongst the oldest commodities of international trade. Throughout the centuries, their ores have been produced from many mines, large and small, in various parts of the world. The value of this ore, as mined, has generally represented a considerable part of the price of the refined metal.

From early times, these ores were



despatched to centrally established smelters. Most of these were customs smelters, which treated the miners' ore on toll at a scheduled tariff; that is, the miner sold the metal at the market value, from which was deducted the fixed treatment charge. Between despatch of the ore from the mine and sale of the metal on the market, a period of several months would commonly elapse, during which the marekt price might change, a risk which the miner had to accept. In 1881, the London Metal Exchange was founded as a terminal market for the base metals; its "hedging" facilities provided the means by which the producer and consumer would minimize the effect of short term variations in price.

Almost 80 years have since elapsed and, although large integrated base metal mining and treatment organizations have arisen, an important proportion of production continues to come from small mines, particularly in the case of tin, and the customs smelters is still an essential part of the industry. However, the bulk of metal today is sold direct, between the producer or smelter and the consumer, and only a small proportion of the total metal marketed now passes through the London Metal Exchange and other commodity markets. But the prices of the metal which is sold direct by producers to consumers are related either specifically or indirectly to the quotations on the London Metal Exchange.

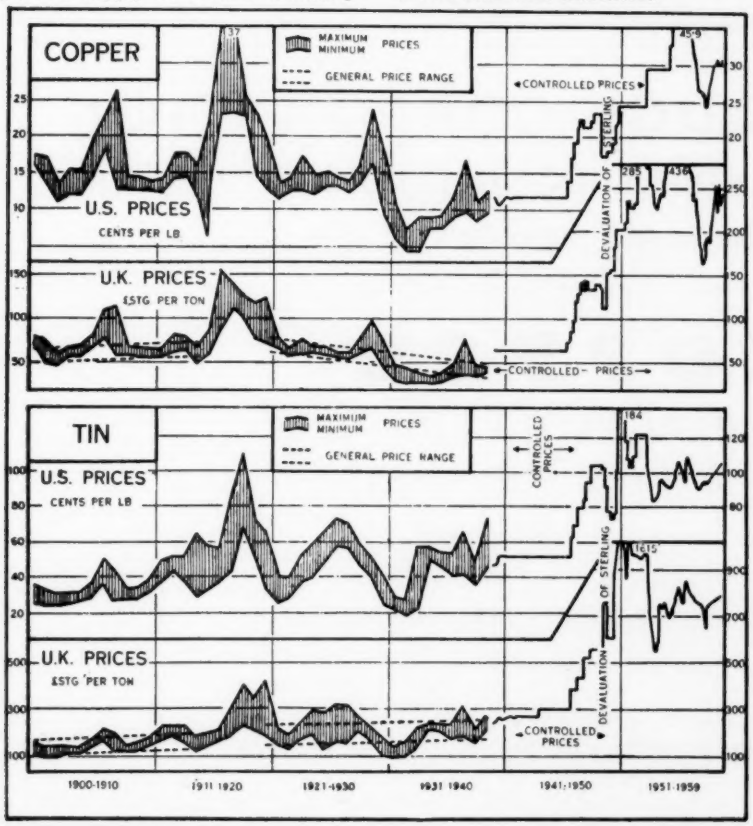
The relatively small amount of metal passing through the exchanges comprises a highly competitive "fringe" trade. Any shortage or surplus of supply in such a relatively limited tonnage market gives rise to a far greater price sensitivity than would be the case if all metal were marketed through the exchanges. Supporters of the exchanges, and the London Metal Exchange in particular, have contended, with some justification, that prices would be less sensitive if producers and consumers would make greater use of them.

Price History

To view the problem of price stabilization in perspective, we may trace briefly the price changes in the base metals since early this century.

The accompanying graphs (reproduced from The Australian Mineral Industry, Quarterly Review) illustrate the price changes of each of the base metals since 1900. The maximum and minimum prices are shown in each year to 1940, but thereafter the through-the-year prices are indicated. On the graphs of U. K. prices, "the general price range" represents the range within which it is judged that prices would have fluctuated if supply and demand had remained more or less in balance.

Lead and Zinc. During the early part of this century, up to World War I, lead and zinc ores were produced in various countries, mainly at small mines which despatched their ores to smelters in the United Kingdom, Europe, and the United States. Despite wide annual fluctuations, prices showed an uptrend, the general price range for lead rising from £10-18 to £12-20 by 1914, the general price range for zinc during the same period rose from £15-22 to £21-28. (Prices throughout are in sterling unless otherwise indicated.)



The abnormally high prices brought about by the strong demand during World War I were succeeded by a fall to more normal levels in the early 1920's, but the increasing industrial demand of the mid-1920's led to the development of new mines in various countries. By 1930, world production capacity had increased to such an extent that the lead-zinc industry was more seriously affected by the slump of the 1930's than any other metal industry. Prices of both metals fell to £9 a ton, and did not begin to recover until 1936. From 1920 to 1940 world consumption requirements lagged behind the increasing production capacity, and the general price range showed a downtrend over the period as a whole. By 1939 the price range for lead was £14-23, and for zinc £15-24.

Then followed the war and post-war period of price control, which was more prolonged in the U. K. than in U. S. A. By 1949 the lead supply became more or less adequate, but Government bulk buying and controlled prices continued in the U. K. At the end of 1950, early in the Korean War, there was a temporary shortage of zinc concentrates for treatment in the U. K., and zinc was under strong demand for a brief period; the metal came under allocation by the International Materials Conference in the fourth quarter of 1951, but was so readily available by June, 1952, that allocation was abandoned. But prices of both metals had been lifted to remarkably high levels under pressure from producers.

With re-opening of the London Metal Exchange for dealings in lead on 1st October, 1952, and in zinc on 2nd January, 1953, prices fell precipitately to more reasonable levels. Since the beginning of the century, the price of zinc had tended to be higher than that of lead, but now the price of zinc dropped below lead, and continued in that relative position until 1958.

From 1954 the U. S. Government price support policy of buying lead and zinc for the national stockpiles lifted prices to levels which were rather above the ceilings of a general price range for an unsupported market. When stockpiling ceased in 1957 prices collapsed to the other extreme. Zinc has since recovered more quickly than lead, and, with an annual increment in world consumption surpassing that of lead, zinc may maintain its present relatively higher price level.

Copper. During the early part of this century copper, like lead and zinc, was largely produced by small mines which sent their ore or concentrates to customs smelters, mainly in the U. K., Germany, and U. S. In general, the price of copper tended to rise, although this was somewhat obscured by the brief period of tight supply in 1906-07; the general price range was about £54-65 by 1914. During World War I open market prices rose to abnormal levels, £150 being quoted in 1915. After the war, great copper deposits in the United States and Chile were developed, and in the late 1920's and early 1930's the low-cost deposits of Central Africa came into large-scale production. With these developments, the price trend of copper was downwards between the two World Wars, falling from £60-75 in 1920 to £35-50 in 1939. During

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the depression period, 1931 to 1936, the price remained consistently below the floor of this price range.

During World War II the price of copper was fixed; in the United Kingdom controls were continued after the war to 1953, but the price was lifted to successively higher levels under pressure by producers, particularly during the Korean War. With cessation of government bulk-buying and of controls in the U. K., in 1953, dealings in copper were renewed on the London Metal Exchange, and the price began to fall sharply. However, the purchase of 100,000 tons of copper from Chile by the U. S. Government, followed by a series of strikes at mines in the main producing countries, brought copper into short supply — open market prices reached extraordinarily high levels. But by 1956, as production returned to normal and copper became in ample supply, prices fell, and by late 1957 had receded to well below £200. Leading producers cut output, and prices soon recovered. Today, a general price range for copper of £200-270 on the LME would seem to be about the norm.

Tin. The price of tin has shown a general rising trend since the beginning of this century. There have been two periods of abnormally high prices — during World War I and during the Korean War. With onset of the depression, prices fell to a very low level, but, under the International Tin Agreement established at that time, severe cuts in production helped to restore the price of tin to more reasonable levels more quickly than was the case with other base metals in the 1930's.

World production of tin has depended increasingly on the mining of lowered grade ground, and this has been possible mainly because of increased efficiency, particularly of the larger tin dredges operated in the East. Under the Tin Agreement of the 1930's, the severe quota cuts in production were reflected in increased costs.

After World War II the price of tin rose sharply, with inflation. Tin was the first of the base metals to be decontrolled in the United Kingdom, and in 1949 the London Metal Exchange was reopened for dealings in tin. The price immediately receded to the level which the market judged to be competitive at that time. But, from 1950, early in the Korean War, the price was bid to a remarkably high level, mainly under the influence of the U. S. Government buying. However, the price soon eased to a more reasonable level. World production was, in fact, considerably in excess of real consumption.

In anticipation of the effects which surplus production capacity would have on the industry, an International Tin Agreement was drafted in 1953, but did not come into effect until mid-1956. In the meantime, U. S. stockpiling had kept surplus tin off the market, and, for the first few months of the Agreement, no action was necessary to reduce production. The price range initially written into the Agreement was £640-£880, but in March, 1957, the range was revised to £730-£880. With final cessation of U. S. stockpiling at the beginning of 1957, the price of tin, which had reached £887/10, trended downwards. By then, rising Free World consumption was approaching the level of falling production, and the surplus showed signs of vanishing. But consumption fell as the U. S. recession made itself felt almost immediately, and large quantities of Russian tin began to appear on the Free World market. After mid-1957 the price of tin was maintained at or just above £730, the floor of the Agreement, by purchases of tin into the Buffer Stock, and, from mid-December, 1957, tin exports from producer countries were subject to quota. The price floor was held until September, 1958, when, with exhaustion of funds at the disposal of the Buffer Stock manager, the price fell momentarily to £642/10, but quickly recovered. Russian imports into western countries were reduced, the export quotas have since been increased, and, since early 1959, the price of tin has risen to the level at which the Buffer Stock manager has been empowered to sell tin and recover some of the Buffer Stock's finances. As consumption further improves no recession from recent prices seems likely in the near future, unless there is a resumption of the flow of Russian tin.

Effect of Gov't Policies on Prices

During the period from 1900 to World War II the maximum price of each base metal on the London Metal Exchange exceeded the minimum price by 50 per cent in each of about 25 per cent of the years. Since World War II this disparity between yearly maximum and minimum prices has not improved; indeed, it seems to have been worsened despite the fact that the period has been one during which governments either directly controlled or strongly influenced prices.

Prices of lead and zinc in particular soared to extremely high levels under direct government controls. With resumption of dealings in these metals on the London Metal Exchange in 1952 and 1953, prices dropped to levels which were normal according to the judgment of the market. But, thereafter, U. S. Government price-support stockpiling lifted prices to a high level and production capacity was stimulated throughout the world. With cessation of stockpiling in 1957, excess production capacity led to an accumulation of extensive stocks by producers, and to a sharp fall in prices, accentuated by the U. S. recession. During 1959 a voluntary agreement amongst producers to restrict output or sale had led to a decided improvement in the zinc position, and, to some small extent, in lead.

Prices of copper have shown even wider fluctuations. The high prices under controls in the United Kingdom were succeeded by a fall to more reasonable levels when the LME was re-opened for dealings in copper in 1953. But almost immediately U. S. stockpile intake and a series of strikes at the mines in the main producing countries left copper in very short supply on the open market, resulting in the extremely high prices of 1955-56. As production conditions improved by the end of 1956, prices receded to more normal levels and, with the U. S. recession of 1957, they dropped for a brief period to an unduly low level.

Since World War II tin has not been free from the effects of governmental policies in some way or other. The very high prices during the early part of the Korean War were due to governmental bidding. Continued stockpile buying maintained prices to 1957. The International Tin Agreement has influenced prices since then.

Thus we see that, since World War II, there has been no period during which the base metals have been sufficiently free from governmental influence to permit supply to find a true balance with consumption. We are not justified in assuming that the consequent wide fluctuations in prices would also have been characteristic of a national market which was uninfluenced by governmental actions of any sort over a lengthy period.

Initially, governmental actions have tended to lift prices to high levels, thus stimulating marginal production. With cessation of the stimulus, prices have fallen to unduly low levels, until production has been reduced in line with real consumption.

The thoughtful producer is as much concerned with excessively high prices as with unduly low prices, but, in the main, political publicity has emphasized the low prices of 1957-58.

Looking back to the years since 1900 we see that, before World War II, the only period when prices fell to abnormally low levels was during the depression of the 1930's. Since then the recession of 1957-59 has been the only period of serious difficulty to the producers of base metals.

Certainly, over a period of 60 years, abnormally high prices have been more frequent than abnormally low prices. The most severe of these high price movements have been directly attributable to governmental actions, apart from strikes.

This recounting of the disturbing effect of governmental actions on mineral prices ignores the other side of the picture—a side which has been very well worth while despite all the problems that have arisen. Without the price support policies of the U. S. Government, it is doubtful whether remarkable development and increase in knowledge of the world's mineral resources during the past 10 years would have been possible. One might, indeed, write a paper on the advantages of fluctuating prices!

National and international governmental policies which influence industry are here to stay, and they will continue to affect prices in one way or another in the future. The thing to do is to learn how they may be best utilized and to minimize their unstabilizing effects.

History of Base Metal Stabilization To 1940. We may now examine some of the attempts made in the past to stabilize base metal prices. Such attempts have generally had as their objective the lifting of prices above depressed levels.

Amongst the base metals, tin has had the most prolonged history of attempts at stabilization, going back to the years immediately following World War I, when rising stocks led to a price fall. A group of Eastern producers, under the Bandoeng Agreement in 1922, isolated part of the excess metal as a Supplementary Stock. When prices improved, the

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AMAX

Supplementary Stock was gradually released until exhausted in November, 1924.

Tin was again in excess supply in 1929. A voluntary cut in output by producers in Malaya, Indonesia and Bolivia, members of the Tin Producers' Association, failed to maintain price because of continued high production by non-members. However, effective from 1st March, 1931, the British, Dutch and Bolivian Governments agreed to restrict production compulsorily in their territories, under the International Tin Committee. In addition, an International Tin Pool was formed separately, to absorb excess stocks. Prices did not improve until the end of 1933, and the Tin Pool was dispersed in that year. However, the Committee continued to function. The Tin Agreement was renewed in 1934 and again in 1937, other countries joining from time to time. Eventually, a Buffer Pool was incorporated as an integral part of the Agreement, which continued until the war. Prices of tin ranged widely during the life of the Agreement, but at least it can be said that the price of tin recovered from the depression earlier than that of any other base metal.

During the 1920's the price of copper showed a downward trend. A group of the world's main producers formed Copper Exporters Incorporated in 1926. They endeavored to control export prices of copper by selling direct to consumers, thus avoiding the daily price fluctuations on the metal exchanges. At the start of the depression in 1929, prices were fixed at the equivalent of U. S. 18 cents a lb., but, despite reductions in output by some of the larger producers, heavy stocks accumulated as demand declined, and by 1932 the price was forced down to only 5 cents a lb. The members agreed to reduce output to only 25 per cent of capacity, in April, 1932, but the Corporation terminated its activities shortly afterwards.

Some three years later, in 1935, the principal producers of copper outside of the United States — companies in Northern Rhodesia and Belgian Congo, Rio Tinto in Spain, Bor in Yugoslavia, and subsidiaries of U. S. companies in Mexico and South America — representing a total of 50 per cent of the world's production capacity other than that in the United States — formed the Copper Cartel. Production was periodically adjusted to demand. U. S. anti-trust laws prevented domestic mines from participating in the Cartel, but, as a safeguard against Cartel prices, groups of U. S. producers amongst themselves fixed export prices — hence the Cartel prices indirectly influenced U. S. prices. The Cartel terminated with the war.

In the period to 1940, lead and zinc producers were less vigorous than tin and copper producers in their effort to influence prices. Nevertheless, efforts were made in the 1930's by some of the leading lead-zinc producers to agree to production quotas, but, as they mined only a relatively small proportion of the world's total output, the attempts were unsuccessful and were abandoned.

Since 1940. The introduction of controls during World War II had the dual purpose of ensuring adequate supplies of materials for war purposes, and the prevention of such excessive price increases as were experienced in World War I. Price controls were continued after the war, but were lifted earlier in some countries than in others. In some countries the controls were an accompaniment of government bulk buying, as in the United Kingdom; in other countries they were maintained simply in an attempt to minimize inflation. They were necessarily accompanied by export and import controls. Thus the flow of trade was greatly restricted.

Although prices had been rigidly pegged up to 1945, the cessation of the war producers' claims of increased costs led to successive rises in the controlled prices in all countries. But, by early 1950, the supply-demand position had so improved that the controls on supply were largely relaxed. However, with the commencement of the Korean War, increased demand led to an apparent shortage of supply of certain commodities, and the International Materials Conference was formed in 1951 to allocate these commodities. Zinc was under allocation for a brief period to mid-1952, and copper to the beginning of 1953. Tin and lead were readily available and were not subject to allocation.

In 1954 important copper producers were disturbed at the effect which rising prices would have on copper's ability to meet the competition of other materials. In April, 1955, the Rhodesian Selection Trust arranged to sell copper to several large consumers in the United Kingdom on an agreed price basis. However, the Trust was forced to lift prices periodically not far behind the rising LME prices, and later, from March, 1956, the Trust had to lower prices in successive stages in line with LME prices. On the 7th October, 1957, the Rhodesian Selection Trust apparently concluded that a two-priced system in the U. K. gave rise to such problems that it was inadvisable to continue the pricing arrangement, and reverted to the LME quotations as the basis for U. K. sales.

Producers in the Belgian Congo and United States fix the cash price from time to time, but find it necessary to make adjustments when their prices get unduly out of line with metal exchange quotations.

When the prices of lead and zinc fell in 1953 proposals were discussed in the United States to maintain domestic prices of these metals at levels remunerative to U. S. producers. Had the proposals been pursued they would have had unfortunate reactions on production in other countries. The U. S. Tariff Commission in 1954 recommended increased tariffs, but the U. S. Government rejected the proposal in favor of the policy of supporting price by purchasing lead and zinc for the national stockpiles. These purchases kept lead and zinc in tight supply and, as prices were maintained at a high level, encouraged much marginal production. Thus the problem was worsened when stockpiling ceased, especially as cessation coincided with the beginnings of a recession. The U. S. Government decision in 1958 to subject lead and zinc imports to quota allocation helped the U. S. miner to some extent, but threw the weight of the problem unevenly on to producers in other countries. The agreement by producers in most of these other countries early in 1959 to cut production or sales, helped by some rise in real consumption, has improved the position, certainly of zinc. The U.N.O. Study Group on lead and zinc will hold its first meeting early in 1960, and possibly by that time the producers will review their present arrangement.

We may now briefly trace the history of the present International Tin Agreement, of which all of the leading producers in the Free World are members; amongst important consuming countries of the Free World, U. S., West Germany and Japan have not joined the Agreement.

A Tin Agreement had been under discussion since 1949, when it became clair that, with rehabilitaiton of the war-damaged tin industry in the East, tin would be in surplus supply. An International Tin Agreement was finally drafted at a U. N. Conference in 1953, but did not come into operation until July, 1956. In the meantime, surplus tin has been absorbed into the U.S. stockpile.

Fundamentally, the Agreement endeavours to equate supply to demand by restricting exports from producing countries to agreed quotas, which are adjusted quarterly according to the estimated demand. The quotas are based on production in each country during a preceding period of some length. In addition, by means of a secondary mechanism, the Buffer Stock, the short-term price is influenced by buying or selling tin, mainly on the London Metal Exchange. The Agreement can, of course, aim only to limit and not to prevent fluctuations in price.

In order to maintain the price of tin, severe cuts in exports were necessary, ranging up to 48 per cent of the 1956/57 production of member countries. Part of the severity of these cuts was due to the disposal of large amounts of Communist tin on western markets.

International Tin Agreement, 1956-61

The International Tin Agreement is commonly quoted as a model for other metal agreements. It is of interest to examine the extent to which the Agreement can be successful in attaining its objectives. These are stated in Article I of the Agreement:

(a) to prevent or alleviate widespread unemployment or under-employment and other serious difficulties which are likely to result from maladjustments between supply and demand for tin;

(b) to prevent excessive fluctuations in the price of tin and to achieve a reasonable degree of stability of price on a basis which will secure long-term equilibrium between supply and demand.

(c) to ensure adequate supply of tin at reasonable prices at all times; and

(d) to provide a framework for the consideration and development of measures to promote the progressively more economic production of tin while protecting tin deposits from unnecessary waste or premature abandonment.

In the event, the Agreement has

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Cadmium Oxide	*Sulfuric Acid*
Cadmium Sulfide	*Tellurium*
Copper	*Thallium*
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been quite unable to maintain its first objective — the prevention of unemployment. In Malaya, the largest and most competitive producer, during the first six months of 1958, 9,600 men were dismissed from tin mines, and the number of operating mines shrank from 716 to 449. The Agreement simply led to the more even spreading of unemployment between generally more competitive and less competitive countries.

The price of tin during the past 12 months has ranged between £730 (the floor price under the Agreement) and £795. This is not an unduly wide range, although it is of real significance to the marginal producer. When the Buffer Stock ran out of funds in September, 1958, the Agreement was quite unable to prevent the price from falling below the floor to £642/10 — the collapse was, however, very brief, as severe cuts in exports began to assert their effect at that time. On the other hand, it is unlikely that the Agreement, in its present terms, could prevent a rise in price above £880, the ceiling under the Agreement, if, in time of shortage, the Buffer Stock ran out of metal to sell.

Whether a degree of price stability similar to that of the past 12 months would have been attainable in the absence of an Agreement is debatable. Certainly there would have been a sharper drop in price in 1957, when the surplus of production became serious and Russian tin began to appear on the western market. Competitive producers would have maintained their full operating efficency. The more marginal mines would presumably have been forced to cut production; the larger proportion of these is in Bolivia. Belgian Congo and perhaps Indonesia. Prices would then have recovered to a level capable of maintaining competitive production. Production from the more generally competitive countries and mines would have been at a higher tonnage level than under quotas, and this may well have more than compensated the effect on revenue of the earlier lower prices. However, this assumes that the marginal mines would not be assisted by their governments.

In effect, the countries containing a higher proportion of competitive mines are subsidising the countries with a higher proportion of marginal and sub-marginal mines.

The second part of objective (b) seems to be of doubtful significance. Long-term equilibrium between supply and demand is scarcely determined by "a reasonable degree of stability of price" as such. In an open competitive market long-term equilbrium between supply and demand may be ensured by permitting the price to move to a level which will bring out the necessary amount of metal. Under the Tin Agreement to date, the price has had virtually no influence on production in relation to demand — that relation has been met solely by export quotas in the short term.

Objective (c) is utterly beyond the power of the Agreement — in times of shortage, once the Buffer Stock metal is exhausted the Agreement could neither "ensure" that adequate tin would be available, nor, under its present terms, could it prevent the price of tin from rising above £880. Indeed, the very procedure by which export quotas are determined tends to inhibit exploration for and development of new resources, and thus may hasten the day when a long-term shortage will develop. This is, perhaps one of the most serious weaknesses of Agreements of the restrictive type, based on historic statistics — we shall return to this point later.

Under objective (d), the Agreement certainly cannot be said to have led to the more economic production of tin. On the contrary, it consistently favours the high cost and uneconomic producer, whether it be technically efficient or otherwise. Nor can it be said to have protected tin deposits from waste or premature abandonment — not improbably some mines which were closed during the period of severe quota restrictions may not reopen. In this respect, the position is probably little, if any, different from the circumstances which mines would have faced under competitive production.

Under its present terms, the International Tin Agreement can function only within a limited range of supply and demand, to restrain fluctuations within a lower range of prices, by actions which exclude considerations of efficiency, economic production, and the development of new resources. Despite its objectives, its actions are solely directed to the attainment of short-term results.

It contains a quality of great significance — it distributes the effects of the burden of over-supply evenly, on a tonnage basis, amongst the producing countries. To a non-competitive, under-developed country, this may be of considerable economic benefit. But it requires great altruistic sentiment for a competitive and perhaps equally under-developed country to be so international in outlook as to share in a scheme whereby it virtually subsidises producers who are economically non-competitive. Maybe the consumer members of the Agreement might be expected to display an equally altruistic spirit and share some of the problem — under the existing Tin Agreement, the consumer countries accept virtually no responsibility.

Conclusions on Stabilization Attempts

The problems of the metal markets cannot be fully appreciated, nor any worth-while attempt made to solve them in the absence of reliable statistics. The International Materials Conference provided a lesson that statistical information available on copper, zinc and lead was both unreliable and inadequate for the purpose of international negotiations, and could indeed exaggerate rather than clarify current problems. Nevertheless, no subsequent attempt was made to maintain detailed statistics of these metals on an official international level, as had been done in the case of tin. Recent discussions on lead, zinc and copper have emphasized the importance of reliable statistical data.

The pre-war history of copper, and the recent voluntary agreement amongst lead-zinc producers, suggests that if a large proportion of world production is by a relatively few organizations, production can be adjusted to some extent to influence prices without the direct participation of governments.

Early voluntary attempts to influence base metal prices broke down if a considerable proportion of production was by small producers who refused to enter a voluntary restrictive scheme. In such cases, inter-governmental agreements of a compulsory restrictive type, such as that of the International Tin Agreement, may attain some success in influencing prices.

However, an arrangement which may be workable for one metal may not be suitable for another. An agreement on tin was comparatively simple to draft because:

(a) Production is limited to a few countries which export almost their entire production.

(b) The main Western consumer countries are not producers of tin.

(c) By-products are rarely important in tin production.

(d) To date, tin has been relatively free from the competition of other metals.

Compulsory restriction of exports of lead and zinc would need to take into consideration the following:

(a) U. S. A. is both the principal consumer and importer of lead and zinc, and is at the same time the leading producer of zinc and the second largest producer of lead. Thus, compulsory restriction of exports would throw the full burden on to producers in countries other than the United States.

(b) The bulk of lead and zinc is produced from the same ore-bodies, and in proportions which have little scope for variation. Some zinc also accompanies copper production. Thus the production ratio of these metals may not be in line with their demand ratio. Their relative consumption trends are also different, so that mine production restrictions may well lead to a further imbalance of supply of one or other commodity.

(c) Important by-products, of lead-zinc production, such as cadmium, cobalt, silver, gold and sulphuric acid, may be seriously affected by production controls on lead and zinc.

(d) Scrap supplies of lead are 30 per cent of total requirements, and may be an important factor in the consideration of restrictions on new production.

(e) Most mining countries have considerable smelting capacity. Restrictions on production would cause a profound change in world trade to countries where smelters are largely dependent on imports of concentrates.

An international arrangement designed to cover such a complex industry may well defeat its main objective.

In earlier years I have inclined to favor international arrangements of the Tin Agreement type on two main grounds: (a) their assumed conservation value, and (b) the apparent assurance which they provided to a country to plan ahead. These can no longer be regarded as tenable.

The significance of conservation is related to the variable grades of ore

(Continued on Page 17)

U. K. COPPER OUTLOOK HELD UNCERTAIN; SITUATION IN CONGO ACTS AS BRAKE ON PESSIMISM ON PRICES

Tin Market Overshadowed by UN Discussions on Renewing World Agreement; Lead Sentiment Turns Less Cheerful; Zinc Consumption Holds at Good Rate

June 8, 1960

By L. H. TARRING
London, England

THE copper market here during the past month has given a very fair indication of a weather-vane veering in different directions according to every new breeze that springs up. At the beginning of May prices were still fairly high; stocks in the London Metal Exchange warehouses were very low; the strike at Potrerillos and Chuquicamata was in operation, and there was a possibility of of its extension to other Chilean mines, but despite these factors the undertone of the market was rather soft owing to the widespread anticipation of a surplus developing in supplies as the year wore on. This viewpoint was strengthened by various references by leading copper magnates to the need for output to be trimmed to the requirements of consumers if major swings were to be avoided, and also by the April statistics of the Copper Institute showing an appreciable, though not outstandingly large increase in World stocks.

On the other side of the picture due account was taken of the fact that consumption outside America was running at record high levels with nearly all U.K. fabricators running flat out in top gear and still lengthening their order books. Another factor preventing an entirely bearish view of the market developing, was the continued and unabated uncertainty as to what might happen in the Belgian Congo after it received its independence on July 1st. Despite the asseverations of the big producers there that it is confident there will be no serious interruption in copper production and deliveries, and that a satisfactory modus vivendi will be achieved with the new Congolese Government, a good many people here are still afraid that inter-tribal conflicts in that area might provide difficulties.

Copper Wire Rod Slow

The one spot in the U. K. fabricating industry where the capacity is not fully employed is the copper wire rod makers, whose capacity in the aggregate is now such that it is unlikely to be utilised to the full except on very rare occasions. Contributing to this situation was the opening of what is claimed to be the Worlds largest copper rod mill by British Insulated & Callender's Cables Limited. This has an annual capacity of no less than 100,000 tons a year and can convert a wire bar to rod in 95 seconds.

Most close observers of the copper market here, now believe that the World's major producers have definite plans for cutting output to prevent any serious surplus of supplies developing, the statement on this subject by Mr. Harry Oppenheimer, Chairman of the Anglo-American Corporation of South Africa Limited, having been much more positive than references to this subject by other leading copper producers. Whereas the others had been content to draw attention to the desirability of such a course, Mr. Oppenheimer, speaking of the probable surplus, said: "Such a situation, if it comes about, would be met by an appropriate reduction in supply by leading producers, and the knowledge that producers would cut in this way is a factor for stability in the market." This comment certainly had some effect on the market here, checking a downward drift which was also affected at the beginning of June by a fresh drop in L.M.E. warehouse stocks bringing them back to the dangerously low level at which they stood at the end of April.

At the present time the tone of the market can only be called uncertain, as it is still expected that a surplus will emerge in the coming months, but the Congo situation still acts as a brake on pessimism regarding prices, although it is realised that the uncertain African situation may tend to delay necessary cuts in production longer than otherwise have been the case. Thus in the event of Congo independence being achieved without friction, the supply situation might become rather more top heavy than producers would like to see it.

Tin Outlook Uncertain

Practically throughout the past month the tin market has been overshadowed by the United Nations discussions on the renewal of the International Tin Agreement which began in New York on May 23rd. Obviously, until this very major question is settled one way or the other, it is impossible to take any very definite view of the outlook.

Despite the fact that some people point out that the present tin situation hardly provides the basic conditions that the United Nations has laid down as a prerequisite for International comodity schemes, the general view here is that the agreement will be extended for a further period from July 1st, 1961. It was interesting to read the comments of the various delegates at the opening sessions of the conference, putting forward their various points of view, and so to speak, establishing a negotiating base. The serious work of the conference is now going on in closed sessions, when no doubt each country

U. K. COPPER STATISTICS

The British Bureau of Non-Ferrous Metal Statistics reports U. K. stocks of copper at the end of March as 39,878 tons of refined (45,134 tons a month earlier) and 12,599 tons of blister 10,845 tons). Consumers held 24,233 tons (23,137 tons) of the refined stocks. U. K. production of primary refined in March was 7,547 tons and that of secondary refined 10,776 tons. Consumption in March rose to 67,982 tons. Details are given below:

Unalloyed Copper Products	Mar. 1960	Jan.-Mar. 1959	Jan.-Mar. 1960
Wire*	25,932	54,599	71,934
Rods, bars and sections	2,373	4,943	5,506
Sheet, strip and plate	5,942	13,361	15,428
Tubes	6,409	14,962	18,038
Castings and misc.	650	1,950	1,950
Alloyed Copper Products			
Wire	1,949	4,187	5,536
Rods, bars and sections	15,475	31,776	42,265
Sheet, strip and plate	11,302	24,010	31,835
Tubes	2,140	5,180	5,763
Castings and misc.	7,587	17,947	21,847
Copper sulphate	2,831	9,963	6,054
Total all products	82,590	182,878	226,156
Copper content of output	67,982	148,703	186,885
Consumption of refined copper†	54,389	111,714	144,954
Consumption of copper and alloy scrap‡ (copper content)	13,593	36,989	41,931

* Consumption of H. C. copper and cadmium copper wire rods for wire and production of wire rods for export.
† Virgin and secondary refined copper.
‡ Consumption of copper in scrap is obtained by the difference between copper content of output and consumption of refined copper, and should be considered over a period since monthly figures of scrap consumption are affected by variations in the amount of work in progress.

U. K. TIN STATISTICS

According to the British Bureau of Non-Ferrous Metal Statistics U. K. tin consumption was up in March at 2,191 tons compared with 1,879 tons in February. Production rose to 2,743 tons (plus 19 tons of secondary) compared with the previous month's figure of 2,144 tons (24 tons). Stocks rose to 10,677 tons from the February figure of 10,240 tons. Details of consumption of primary tin are given below:

	Mar. 1960	Jan.-Mar. 1959	Jan.-Mar. 1960
Tinplate	1,191	2,443	3,043
Tinning:			
Copper wire	53	142	135
Steel wire	11	25	30
Other	72	196	203
Total	136	363	368
Solder	162	569	527
Alloys:			
Whitemetal	243	750	729
Bronze and gunmetal	236	507	636
Other	38	96	119
Total	517	1,353	1,484
Wrought tin*			
Foil and sheets	24	73	66
Collapsible tubes	28	57	75
Pipes, wire & capsules	2	7	8
Total	54	137	149
Chemical and other uses†	131	291	378
Total all trades	2,191	5,156	5,949

* Includes Compo and 'B' metal.
† Main'y tin oxide and tin compounds.

AVERAGE BRITISH PRICES FOR COPPER, TIN, LEAD, ZINC

(Per Long Ton)

Mean of Bid and Asked Cash Quotation at Close of Morning Session on London Metal Exchange

	COPPER			TIN			LEAD		ZINC	
	Cash	3 Months	Settlement	Cash	3 Months	Settlement	Current Month	3rd Following	Current Month	3rd Following
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1954 Averages	248 17 11	239 17 7	249 0 11	719 8 11	709 17 7	720 6 7	98 8 12	94 7 4	78 5 4	77 16 11
1955 Averages	351 14 11	341 0 3	352 5 6	740 2 12	736 12 11	740 12 8	105 17 3	105 9 6	90 13 4	89 12 3
1956 Averages	328 14 5	324 13 1	329 1 8	787 14 9	774 7 7	788 13 3	116 6 5	114 8 9	97 14 3	95 3 7
1957 Averages	219 8 10	221 0 3	219 12 10	754 15 4	747 10 10	755 3 11	96 12 9	96 13 2	81 11 7	80 1 1
1958 Averages	197 13 3	197 9 3	197 16 11	734 18 6	734 17 11	735 6 1	72 15 8	73 6 10	65 17 12	65 10 12
1959										
January	230 2 0	227 5 10	230 5 0	758 15 6	759 4 9	759 2 10	71 17 0	72 3 3	74 17 8	72 18 8
February	236 4 2	235 10 8	236 7 6	772 9 9	773 9 0	772 15 0	69 19 4	70 16 6	73 13 8	71 19 8
March	248 10 3	247 12 2	248 13 6	779 14 9	783 5 9	780 1 6	69 10 3	71 4 2	75 2 5	73 18 8
April	240 0 5	240 6 6	240 3 5	782 5 3	783 15 5	782 11 4	69 1 0	70 8 4	72 13 9	72 9 2
May	236 4 2	236 11 6	236 6 9	784 4 3	784 10 9	784 10 0	70 16 0	71 13 10	77 7 1	75 17 6
June	230 0 11	230 0 4	230 3 8	788 7 9	789 8 10	788 14 1	69 13 4	71 5 8	78 8 2	77 6 11
July	220 17 6	221 14 9	221 0 3	792 6 6	790 16 4	792 13 6	70 5 0	71 1 2	80 10 7	79 13 4
August	232 16 9	231 9 3	233 0 0	792 18 6	791 18 3	793 4 6	72 3 3	73 3 1	85 5 11	83 19 5
September	230 7 6	230 8 8	230 10 3	792 15 0	792 6 4	793 0 5	70 14 5	72 1 10	86 1 5	84 19 10
October	241 18 5	236 17 5	242 2 11	794 2 9	794 8 2	794 8 2	70 12 5	71 12 2	91 7 4	89 9 2
November	250 11 8	241 7 7	250 18 1	795 7 5	795 14 6	795 13 4	72 2 11	72 7 10	94 18 8	90 3 7
December	255 8 10	239 15 1	255 14 7	789 3 2	785 6 8	789 11 4	72 13 11	72 9 0	95 3 10	90 3 3
1959 Averages	237 13 1	234 15 7	237 16 8	785 7 10	785 10 0	785 14 2	70 15 7	71 13 9	82 4 8	80 5 4
1960										
January	259 5 3	246 8 9	259 12 0	791 7 6	787 11 0	791 14 0	74 15 8	74 10 6	94 11 5	91 14 11
February	263 17 5	245 17 6	264 5 0	792 7 5	790 3 10	792 15 3	73 17 3	73 15 6	88 17 2	88 18 5
March	253 5 4	237 14 10	253 11 4	787 11 0	786 15 0	787 17 10	76 5 4	75 7 4	90 3 2	88 17 12
April	262 2 1	244 15 0	262 8 5	790 11 4	785 5 0	790 18 11	77 10 6	76 11 5	92 8 7	89 15 11
May	248 4 8	243 0 3	248 9 7	785 1 4	784 0 0	785 7 9	77 8 3	76 16 6	92 1 11	91 9 1

will struggle for the best terms it can get.

With probably 8,000 to 10,000 tons of tin still held in the Buffer Stock, and current production apparently sufficient to meet the world industry's needs, a failure to renew the agreement might well have a very marked effect on open market prices. Meanwhile, consumption of tin generally is being quite well maintained, but there has been on interesting change in the prospective smelter output in America and Malaya as a result of the decision announced by Indonesia that she would send the whole of her ore production to the Butterworth smelter in Malaya for treatment.

Lead and Zinc Prospects

During the past month sentiment with regard to lead has become less cheerful over here. Early in the month it was obvious that consumption in Europe including the U.K. was running at quite a good level and it looked as if supplies on their restricted basis were very closely matched with demand. Consequently, when at one time prices topped £78 a ton it was thought that they might go a little further and reach the £80 mark which a number of people believed was the objective of the producers in restricting supplies. However, although there were no obvious indications of any slowing down in consumption on this side of the Atlantic it became apparent that the supply situation was in fact as finely adjusted to demand as a good many people had thought and murmurs began to be heard that the burden of the rising producers' stocks was not one that the interests concerned could cheerfully face indefinitely. When the American Bureau of Metal Statistics April figures came out showing such a big jump in stocks, especially the U.S.A., sentiment got quite a shock especially as the London market had been "softened up" by the reappearance of Spanish lead which had tended to keep open market prices down.

During May it was officially announced that the new London Metal Exchange standard lead and zinc contracts putting the metal on an in-warehouse, on-warrant basis similar to copper would come into operation on October 1st with prompts maturing on and after January 2nd, 1961. There was also a change in the duty clause in the L.M.E. lead and zinc contracts which comes into effect from July 1st. This was necessitated by the 20 per cent reduction in import duties to be put into effect next month by members of the European Free Trade Association. Under the new clause, sellers have the following options:

(a) To deliver Lead/Zinc on which the highest import duty is payable at time of delivery, at contract price.

(b) To deliver English or such Lead/Zinc as at time of delivery may be imported into the United Kingdom free of import duty at contract price plus the highest rate of import duty ruling on Lead/Zinc at time of delivery.

(c) To deliver Lead/Zinc on which the import duty is less than the highest rate ruling at time of delivery at contract price plus the difference between the actual rate of import duty on such Lead/Zinc and the highest rate of import duty ruling on Lead/Zinc at time of delivery.

As the figures below indicate U.K. lead consumption made an excellent showing in the first quarter of this year with the battery trade in the forefront, but cables and pipe and sheet also marking good gains.

Although consumption of zinc in this country continues to run at a high level — rising from 80,408 tons in January/March 1959 to 96,385 tons in January/March this year — the overall supply position of the metal here was eased somewhat in recent weeks. This is mainly due to the continued arrival on this side of fair quantities of U.S. custom smelter zinc which is unable to find a home in America owing to the import quotas. Whilst only part of the shipments are being sold on the open market offering on the L.M.E. have been sufficient to bring prices down during the past month by about £4 a ton. It now looks as if the world supply situation on the basis of unrestricted production and shipments is fully sufficient to meet consumers' requirements even though outside the United States the offtake of the metal is probably runing at record high levels. The outstanding demand in this country has been in zinc alloy die castings which have benefitted very materially from the continuing motor car boom.

U. K. LEAD STATISTICS

The British Bureau of Non-Ferrous Metal Statistics reports the output of English refined lead in March as 9,552 tons. Stocks were slightly lower on the month at 41,248 tons (33,422 tons imported and 7,806 tons English refined) compared with 41,843 tons a month earlier. Stocks held by consumers, however, rose during March from 15,227 tons to 18,674 tons. Consumption was higher at 35,066 tons compared with 30,241 tons in February and a monthly average for 1959 of 28,825 tons. Details of consumption are given below:

	Mar. 1960	Jan.-Mar. 1959	Jan.-Mar. 1960
Cables	9,368	23,922	26,110
Batteries — as metal	3,931	7,260	10,469
Battery oxides	3,620	6,561	9,178
Tetraethyl lead	1,595	5,363	5,250
Other oxides and compounds	3,141	6,128	7,962
White lead	716	1,863	2,181
Shot (incl. bullet rod)	545	980	1,420
Sheet and pipe	6,527	15,469	18,295
Foil and collapsible tubes	464	856	1,238
Other rolled and extruded	708	1,473	1,896
Solder	1,325	3,422	4,123
Alloys	1,861	4,888	5,149
Miscellaneous uses	1,265	3,346	3,781
Total consumption	35,066	81,531	97,052
of which:			
Imported virgin lead	17,387	41,388	48,531
English refined	9,011	16,782	23,113
Scrap including remelted	8,668	23,361	25,408

U. K. ZINC STATISTICS

U. K. stocks of zinc in March rose from 48,689 tons to 51,046 tons according to The British Bureau of Non-Ferrous Metal Statistics. Consumers stocks declined, however, from 20,356 tons to 18,684 tons. Production of primary metal in March was 7,110 tons. Consumption showed further improvement at 35,268 tons compared with 30,480 tons in February. Details are given in the following table:

	Mar. 1960	Jan.-Mar. 1959	Jan.-Mar. 1960
Brass	11,769	25,868	32,578
Galvanizing	9,602	23,664	25,539
of which:			
General	3,220	7,991	8,984
Sheet	2,430	6,520	6,149
Wire	2,123	4,718	5,719
Tube	1,829	4,435	4,687
Rolled zinc	2,421	6,122	6,371
Zinc oxide	2,667	7,177	7,301
Zinc diecasting and forming alloy	6,546	12,123	18,063
Zinc dust	1,297	2,779	3,591
Miscellaneous uses	966	2,675	2,942
Total all trades	35,268	80,408	96,385
of which:			
Slab zinc			
High purity (99.99%)	7,141	13,064	19,795
Electrolytic and high grade (99.95%)	6,787	15,090	18,457
G.O.B. Prime Western and debased	13,058	29,972	34,770
Other virgin material	259	618	698
Remelted zinc	706	1,410	1,918
Scrap — zinc (content)			
Zinc metal, alloys and residues	2,903	8,262	8,343
Brass and other copper alloys	4,414	11,992	12,404

DIRECTION OF WORLD COPPER MARKETS IS EXPECTED TO BE DETERMINED BY BELGIAN CONGO DEVELOPMENTS

Domestic Producers, Custom Smelters Hold at 33c; Lead and Zinc Dull; Tin Firmer; Aluminum, Platinum and Silver Steady; Quicksilver Weaker

June 17, 1960

THE direction taken by the domestic copper market frequently is determined by developments outside the United States. Now that the Chilean influence has waned at least temporarily as result of settlement of labor disputes in that country, the spotlight has swung over to the Belgian Congo where approaching independence is bringing with it a threat of disruption of copper production. The possibility of a crisis in the Congo has served to strengthen copper prices throughout the world. The lead and zinc markets continued to move along in unspectacular fashion with no change in prices. Among the other metals, aluminum was unchanged, tin was firmer, platinum and silver steady and quicksilver weaker.

Congo Independence

A state of emergency was declared in Katanga province of the Belgian Congo on June 14. The step was taken by the Katanga Province Executive College to prevent the establishment of "illegal separate government" in Katanga. It was a means of heading off the rise of local regimes when the Congo gets its independence on June 30. A political cartel, Conakta, had threatened to proclaim immediate independence of the whole Katanga province and to secede from the Congo if the Belgian Parliament does not change the Provincial Assembly rules that would give Conakta greater power. The uncertain situation in the Congo, according to some factors in the industry, may prevail for several months. It is likely the same situation of uncertainty will apply to copper the same length of time.

Informed opinion abroad was that the backwardation on the London Metal Exchange most likely would increase, with the LME spot copper price headed for higher ground. Backing up this bullish sentiment, instances are cited of German brass mills being unwilling to book orders for standard products that call for deliveries within the next eight months. The record breaking deliveries of refined copper to foreign consumers in May, close to 211,000 tons, while conceded to be in excess of actual consumption, were taken as another indication that fabricators abroad are doing an excellent volume of business and are probably overbuying so as to be sure of an adequate supply in case trouble in the Congo disrupts shipments from that source. Large tonnages of copper that are refined in the U. S. from foreign concentrates also have been going abroad.

There is considerable uncertainty as to where control over the Congo's economic resources will be located, and that applies especially to Katanga province, rich in copper, zinc, cobalt, tin, gold and uranium.

The large Belgian copper producing company, Union Miniere du Haut Katanga, on June 15 raised its selling price of copper to 30.625c a pound c.i.f. New York (duty not included). The price f.o.b. Antwerp is 33.75c francs per kilo; the June 15 quotation represents a rise of 1 franc per kilo, or 90 points in the U. S. equivalent price. It was the first advance since May 30. The Belgian price usually follows the trend in London, and between May 30 and June 15 the LME copper price advanced more than £12 a long ton or 1.50c a pound.

A denial that Katanga was stockpiling copper outside the Belgian Congo is reported to have been made by a company official in Brussels. The official was quoted as saying that Katanga's copper output has not exceeded sales so that no surplus was built up and that the company has already sold its entire output for the current year.

Domestic Copper Market

In the domestic market the large primary producers and custom smelters adhered to pricing their refined copper at 33.00c a pound delivered. Custom smelters on June 16 increased their scrap copper buying prices 0.25c, to a basis of 24.50c a pound for No. 2 heavy copper and wire. At 24.50c a pound for scrap, the copper that is refined from this scrap will cost about 30.00c a pound.

While custom smelters, currently, were quoting 33.00c a pound, they have not been able to interest consumers in placing orders at this level. It should also be borne in mind that the scrap that is being purchased at the present time will not be ready for marketing until September, and there is no telling what the copper price will be at that time.

Scrap metal dealers and suppliers, meanwhile were reluctant to sell scrap copper in view of the Belgian Congo situation and the prospects of better prices abroad. There has been a good export demand for scrap at prices better than those prevailing in the domestic market.

May Copper Statistics

Domestic refined copper statistics for May follow in tons, with April totals in parenthesis: production, 147,050 (153,053); deliveries to fabricators, 108,266 (129,663); stocks at end of month, 65,328 (63,373).

Foreign statistics (not including the U. S. A.) for May follow: production, 174,298 (173,350); deliveries to customers, 210,868, (189,374); stocks at end of month, 247,002 (245,984).

Concerning deliveries in May, those to U. S. consumers dropped 21,397 tons from the March total, while those outside the U. S. increased by 21,494 tons.

Lead Demand Light

The domestic demand for lead remained on the light side. Occasional carload sales were being made at the spot price of 12.00c New York and at 11.80c St. Louis.

The recent lead price declines on the London Metal Exchange have been attributed to the appearance of substantial quantities of Russian lead on the U. K. market. While the Russian brand of lead is not registered on the LME and can consequently not be delivered there, some anxiety developed that the Russians might be planning to ship comparatively large quantities of metal during the next few months, and it was thought that this might havea seriously weakening effect on the market.

Domestic smelters, during the month in review, made their first changes in their battery plate smelting charges since January 26 of this year, when the processing fee was established at $70 a ton following a decline of $5 to $10 a ton. On June 7 smelters dropped their smelting charge another $5, to $65 a ton. But on June 13 the processing fee ranged from $65 to $70 a ton, one important factor having increased the fee $5.

U. S. Smelting, Refining and Mining Co. reached an agreement with the union representing workers at the firm's lead refinery in East Chicago, Ind., replacing a contract which had expired on June 15. There was no interruption in operations. The refinery produces about 3,800 tons of refined lead a month and from 800 to 1,000 tons of antimonial lead.

Zinc Buying Slow

Were it not for the moderate volume of business that has been coming from galvanizers, the zinc market would be an extremely quiet affair. Producers appeared to be reconciled to the fact that the current dullness will continue another month or two until the consumers have worked off their inventories. By that time, the new automobile models should be rolling off the assembly lines, and stimulate the demand for Special High Grade zinc.

Pricewise the situation was unchanged; Prime Western zinc was holding at 13.00c a pound East St. Louis, with the 1.75c-a-pound premium for Special High Grade over Prime Western being maintained.

Zinc statistics for May made a rather poor showing. While no one had anticipated that they would be good, they were worse than had been anticipated. Even though production in May was down by some 4,000 tons as a result of the Bunker Hill strike at Kellogg, Idaho, nevertheless the output exceeded the deliveries to domestic consmers and for export by more than 17,000 tons so that the producers' stocks were increased by that amount at the end of May to the highest level that they have been since last November.

May statistics for all grades of zinc follow in tons, with the April totals in parentheses: production, 79,216 (83,221); domestic shipments, 54,640 (64,251); total shipments, 62,039 (71,926); stocks at end of month, 165,038 (147,861).

Alcoa Building Sheets

Aluminum Co. of America on June increased its prices for aluminum building sheets by 0.50c a pound. Alcoa also standardized five sizes. Primary producers maintained their pig and ingot prices, with the 50-pound pig holding at 26.00c a pound for the 99.5 per cent minimum grade, and the 30-pound ingot unchanged at 28.10c a pound for the 99.5 per cent plus grade. Secondary aluminum smelters, during the month in review, marked down prices for some alloys about 0.25c a pound.

Although there is to be a wage increase in the aluminum producing industry on August 1, in accordance with the agreement with the Steelworkers union, there is little likelihood of any price increase at that time, according to an important industry factor. Although he believed that on the basis of costs, a high price would be justified, this factor pointed out that aluminum is an integrated industry and for that reason it is difficult to separate the cost of producing pig aluminum from that of making sheets and a host of other fabricated products.

Tin Price Higher

Tin prices, during the month in review, moved higher. Spot Straits tin at New York on June 16 was quoted at 101.375c a pound, as against the last previous quotation in this space of 99.625c for May 19. For the May 19-June 16 period, the high of 101.625c was registered on June 10, with the low of 99.50c occurring on May 20.

Minor Metals

Except for quicksilver, prices for other minor metals were maintained during the month in review. Spot quicksilver, on June 16, declined by $4 per flask of 76 pounds to a range of $209-$211 per flask; the previous range of $213-$215 had been in effect since February 17.

Platinum held at $81 to $85 an ounce, which range was established on February 17. The New York silver price was maintained at 91.375c an ounce, which level was established on September 3, 1959.

Price Stabilization for Metals

(Continued from Page 13)

which may be available in a mine. If prices fall, lower grade ore may be lost temporarily and in some cases permanently. The argument is debatable that, under an Agreement, such loss of reserves would be less than under competitive marketing because prices would not fall so low as they would in the absence of an Agreement. It may be argued with equal force that prices under an Agreement would keep closer to the floor for a longer period than under competitive marketing, thus leading to even further losses of lower grade ores. The conservation argument has become hypothetical, if not quite untenable, in relation to international agreements.

The assumption that "stabilized" prices under international arrangements of the Tin Agreement type means stabilized revenues, and would thus enable a mine or country to plan ahead is denied by the necessity to reduce production in times of market surplus. Indeed, to the efficient producer, the ability to plan ahead may well be frustrated under an Agreement.

An important criticism of intergovernmental agreements proposed for metals to date is in regard to the inhibiting effect which they would have on prospecting and on development of competitive new production. Under such agreements the principal mechanism of adjustment is by means of quota production or exports. The quotas are invariably based on past statistics — a developing country or mine with potential for considerable competitive production capacity is at once placed at a disadvantage in relation to the long-standing producer who may be relatively less competitive. A prolonged period of quota allocations may well lead to complete cessation of prospecting and development.

It may be contended that the problem is answered under the International Tin Agreement by the annual re-allocation of 5 per cent of the total export quota — the strength of the case put up by each producing country determines its share of the re-allocated tonnage. Having watched closely the working of the Tin Agreement I am completely convinced that at no time has the annual 5 per cent re-allocation adequately compensated the fundamentally unjust quotas based on historic statistics, let alone given encouragement to new production.

The fact remains that there has been no really worth-while new tin deposit found in recent years within member countries of the Agreement. In Malaya, terrorism in post-war years gave no opportunity to prospect new areas, and, whilst the quota system continues, there woud seem little incentive for new development. The principal new production in the world has come from non-members of the Tin Agreement — China and Russia. The obvious lesson for a developing country is not to join Agreements of this type.

On the other hand, such an agreement with production or export quotas based on historic statistics is likely to be in the interests of mines and countries in which development of reserves has reached a peak, or in which production is falling or is becoming increasingly marginal. It may also be in the interests of mines and countries with uncertain markets, but it may be opposed to the interests of mines and countries with long-standing markets.

We may conclude, then, that international agreements so far suggested for the base metals may have two advantages to producers: the relative stabilization of prices in times of excess production capacity; and the spread of the burden of reduced production amongst all producers. But they contain several disadvantages which may be of transcending importance to competitive vigorous developments. Also, they may be powerless to influence prices in prolonged periods of shortage.

Such agreements throw no responsibility on the consumer. But he may have the advantage of reasonably steady prices in periods of normal supply and demand. Agreements are no help to him in times of shortage.

Daily Metal Quotations for May, 1960

The following quotations are taken from the Daily Metal Reporter*
(In Cents Per Pound)

MAY	Copper					Tin Straits New York		Lead		Zinc					Aluminum	Antimony	Silver
	Producers' Price Delivered	Custom Smelters' Price, Del.	Electro f. o. b. Refinery	Lake Del.	Aver. Prompt Electrolytic Export Price f.a.s. N. Y.	Spot	Prompt	New York	Outside St. Louis	Prime West. f. o. b. E. St. Louis	Prime West. Del. N. Y.	Brass Spec. f. o. b. E. St. Louis	High Grade Delivered	Spec. High Grade Delivered	30-Lb. Ingot 99½% Plus f. o. b.	Domestic Spot 99.5% f.o.b. Laredo	(Cents Per Ounce) New York
2	33.00	33.00	32.60	33.00	32.375	98.875	98.875	12.00	11.80	13.00	13.50	13.25	14.50	14.75	28.10	29.00	91.375
3	33.00	33.00	32.60	33.00	32.375	99.25	99.25	12.00	11.80	13.00	13.50	13.25	14.50	14.75	28.10	29.00	91.375
4	33.00	33.00	32.60	33.00	32.375	99.25	99.25	12.00	11.80	13.00	13.50	13.25	14.50	14.75	28.10	29.00	91.375
5	33.00	33.00	32.60	33.00	32.375	99.25	99.25	12.00	11.80	13.00	13.50	13.25	14.50	14.75	28.10	29.00	91.375
6	33.00	33.00	32.60	33.00	31.625	99.25	99.125	12.00	11.80	13.00	13.50	13.25	14.50	14.75	28.10	29.00	91.375
9	33.00	33.00	32.60	33.00	32.00	99.125	99.125	12.00	11.80	13.00	13.50	13.25	14.50	14.75	28.10	29.00	91.375
10	33.00	33.00	32.60	33.00	32.00	99.125	99.125	12.00	11.80	13.00	13.50	13.25	14.50	14.75	28.10	29.00	91.375
11	33.00	33.00	32.60	33.00	32.00	99.25	99.25	12.00	11.80	13.00	13.50	13.25	14.50	14.75	28.10	29.00	91.375
12	33.00	33.00	32.60	33.00	31.75	99.375	99.375	12.00	11.80	13.00	13.50	13.25	14.50	14.75	28.10	29.00	91.375
13	33.00	33.00	32.60	33.00	31.75	99.625	99.625	12.00	11.80	13.00	13.50	13.25	14.50	14.75	28.10	29.00	91.375
16	33.00	33.00	32.60	33.00	31.75	99.50	99.50	12.00	11.80	13.00	13.50	13.25	14.50	14.75	28.10	29.00	91.375
17	33.00	33.00	32.60	33.00	31.75	99.875	99.875	12.00	11.80	13.00	13.50	13.25	14.50	14.75	28.10	29.00	91.375
18	33.00	33.00	32.60	33.00	31.75	99.875	99.875	12.00	11.80	13.00	13.50	13.25	14.50	14.75	28.10	29.00	91.375
19	33.00	33.00	32.60	33.00	31.50	99.625	99.625	12.00	11.80	13.00	13.50	13.25	14.50	14.75	28.10	29.00	91.375
20	33.00	33.00	32.60	33.00	31.50	99.50	99.50	12.00	11.80	13.00	13.50	13.25	14.50	14.75	28.10	29.00	91.375
23	33.00	33.00	32.60	33.00	31.50	99.625	99.625	12.00	11.80	13.00	13.50	13.25	14.50	14.75	28.10	29.00	91.375
24	33.00	33.00	32.60	33.00	31.50	99.75	99.875	12.00	11.80	13.00	13.50	13.25	14.50	14.75	28.10	29.00	91.375
25	33.00	33.00	32.60	33.00	31.50	100.125	100.00	12.00	11.80	13.00	13.50	13.25	14.50	14.75	28.10	29.00	91.375
26	33.00	33.00	32.60	33.00	31.50	100.25	100.25	12.00	11.80	13.00	13.50	13.25	14.50	14.75	28.10	29.00	91.375
27	33.00	33.00	32.60	33.00	31.50	100.125	100.125	12.00	11.80	13.00	13.50	13.25	14.50	14.75	28.10	29.00	91.375
31	33.00	33.00	32.60	33.00	31.50	100.00	100.00	12.00	11.80	13.00	13.50	13.25	14.50	14.75	28.10	29.00	91.375
AV.	**33.00**	**33.00**	**32.60**	**33.00**	**31.80**	**99.554**	**99.548**	**12.00**	**11.80**	**13.00**	**13.50**	**13.25**	**14.50**	**14.75**	**28.10**	**29.00**	**91.375**
HI.	**33.00**	**33.00**	**32.60**	**33.00**	**32.50**	**100.25**	**100.25**	**12.00**	**11.80**	**13.00**	**13.50**	**13.25**	**14.50**	**14.75**	**28.10**	**29.00**	**91.375**
LO.	**33.00**	**33.00**	**32.60**	**33.00**	**31.25**	**98.875**	**98.875**	**12.00**	**11.80**	**13.00**	**13.50**	**13.25**	**14.50**	**14.75**	**28.10**	**29.00**	**91.375**

* When split quotations prevail the daily average price is listed. The highs and lows for the month take into consideration the levels reached at both sides of such ranges.

Copper Statistics Reported by Copper Institute

Combined Totals in U. S. A. and Outside U. S. A.

(In tons of 2,000 pounds)

	Crude Production		Refined	Deliveries to	Refined Stock	Stock Increases or Decreases		
	Primary	Secondary	Production	Customers	End of Period	Blister	Refined	Total
1957								
Total	**2,897,719**	**123,270**	**3,035,588**	**2,853,307**	**458,340**	**—14,599**	**+103,920**	**+89,321**
1958								
Total	2,713,412	138,696	2,811,108	2,918,404	262,544	+41,000	—195,796	—154,796
1959								
August	232,944	4,552	223,452	237,944	378,649	+11,543	—11,519	+ 24
September	186,837	7,652	187,294	232,282	354,926	+ 7,195	—23,723	—16,528
				(Oct. 1)	356,614			
October	184,409	10,955	181,707	210,945	330,438	+13,657	—26,176	—12,519
November	192,353	10,631	186,496	229,281	311,049	+16,388	—19,389	— 3,001
December	211,575	9,767	203,614	238,095	293,006	+17,728	—18,043	— 315
Total	2,860,454	134,583	2,926,657	2,973,026	293,006	+68,380	+28,774	+97,154
1960								
January**	259,779	13,116	257,614	272,040	304,038	+15,278	— 3,426	+11,852
February	271,765	14,578	269,952	280,656	302,351	+16,391	— 1,687	+14,704
March	307,064	12,198	303,503	307,572	300,790	+15,759	— 1,561	+14,198
April	302,268	17,477	326,403	319,037	309,357	— 6,658	+ 8,567	+ 1,909
May	300,676	17,248	321,347	319,134	312,330	— 3,423	+ 2,973	— 450

In U. S. A.

1957								
Total	**1,116,380**	**112,060**	**1,616,964**	**1,277,946**	**181,024**	.....	**+60,379**	.....
1958								
Total	1,008,170	131,294	1,446,540	1,179,416	80,722	.....	—100,302	.....
1959								
August	51,327	3,994	83,677	90,123	94,109	.....	— 9,323	.....
September	19,503	6,578	44,468	92,501	79,826	.....	—14,283	.....
				(Oct. 1)	81,514			
October	20,931	9,861	44,218	68,648	78,308	.....	— 3,206	.....
November	18,351	9,710	37,299	83,626	74,642	.....	— 3,666	.....
December	26,686	8,595	46,302	90,039	64,763	.....	— 9,879	.....
Total	805,875	121,462	1,221,612	1,312,328	64,763	.....	—17,647	.....
1960								
January	65,677	10,707	86,491	102,829	68,550	.....	+ 3,787	.....
February	85,899	12,628	105,417	111,851	64,007	.....	— 4,543	.....
March	107,514	9,166	131,308	126,776	61,598	.....	— 2,409	.....
April	104,895	14,765	153,053	129,663	63,373	.....	+ 1,775	.....
May	105,398	13,857	147,050	108,266	65,328	.....	+ 1,995	.....

Outside U. S. A.*

1957								
Total	1,781,339	11,210	1,418,624	1,575,361	**277,316**	.....	**+43,541**	.....
1958								
Total	1,705,242	7,402	1,364,568	1,738,988	181,822	.....	—95,494	.....
1959								
August	181,617	558	142,276	147,821	284,540	.....	— 2,196	.....
September	167,334	1,074	142,646	139,781	**275,100**	.....	**— 9,440**	.....
October	163,478	1,093	137,489	142,297	252,130	.....	—22,970	.....
November	173,902	921	149,197	145,655	236,407	.....	—15,723	.....
December	184,889	1,172	157,312	148,056	228,243	.....	— 8,164	.....
Total	2,054,579	13,121	1,705,045	1,660,698	228,243	.....	+46,421	.....
1960								
January**	194,099	2,409	171,123	169,211	235,488	.....	— 7,213	.....
February	185,866	1,950	164,535	168,805	238,344	.....	+ 2,856	.....
March	199,550	3,023	172,145	180,796	239,192	.....	+ 848	.....
April	197,373	2,712	173,350	189,374	245,984	.....	+ 6792	.....
May	195,278	3,391	174,297	210,868	247,002	.....	+ 1,018	.....

* Excludes production of Russia, Japan, Yugoslavia, Norway, Sweden, Finland, the Messina Mine in Transvaal and output of several other small producing countries from which reports are not available. Represents approximately 90 per cent of Free World.

** Starting with January, 1960, figures include production from Australia and additional production from Europe.

Electrolytic Copper

Producers' Price, Del. Valley
Monthly Average Prices
(Cents Per Pound)

	1957	1958	1959	1960
Jan.	36.00	25.69	29.00	33.00
Feb.	33.318	25.00	29.972	33.00
Mar.	32.00	25.00	31.14	33.00
Apr.	32.00	25.00	31.50	33.00
May	32.00	25.00	31.50	33.00
June	30.955	25.36	31.50	...
July	29.25	26.125	30.587	...
Aug.	28.639	26.50	30.00	...
Sept.	27.031	26.50	30.571	...
Oct.	27.00	27.548	30.75	...
Nov.	27.00	29.00	32.375	...
Dec.	27.00	29.00	33.00	...
Aver.	**30.183**	**26.31**	**30.991**	...

Electrolytic Copper

Custom Smelters' Price, Del. Valley
Monthly Average Prices
(Cents Per Pound)

	1957	1958	1959	1960
Jan.	34.87	24.577	29.429	35.00
Feb.	32.273	23.557	30.361	35.00
Mar.	30.952	23.326	33.31	33.609
Apr.	31.24	23.66	32.84	33.00
May	30.163	23.865	32.00	33.00
June	29.60	25.52	31.477	...
July	28.39	29.231	29.52	...
Aug.	27.862	26.52	30.056	...
Sept.	25.948	26.355	33.00	...
Oct.	25.722	28.577	33.00	...
Nov.	25.435	29.829	Nom.	...
Dec.	25.26	28.846	35.00	...
Aver.	**28.93**	**25.905**	**31.808**	...

Lake Copper

Producers' Price Delivered
Monthly Average Prices
(Cents Per Pound)

	1957	1958	1959	1960
Jan.	36.00	25.69	29.00	33.00
Feb.	33.182	25.00	30.00	33.00
Mar.	32.00	25.00	31.14	33.00
Apr.	32.00	25.00	31.50	33.00
May	32.00	25.00	31.50	33.00
June	30.955	25.00	31.50	...
July	29.25	25.75	30.587	...
Aug.	28.611	26.50	30.00	...
Sept.	27.00	26.50	31.107	...
Oct.	27.00	27.577	31.50	...
Nov.	27.00	29.00	32.833	...
Dec.	27.00	29.00	33.00	...
Aver.	**30.162**	**26.251**	**31.222**	...

Fabricators' Copper Statistics

(In tons of 2,000 pounds)

	Fabricators' Stocks of Refined Cop.	Unfilled Purchases of Refined by Fab. from Producers	Fabricators' Working Stocks	Unfilled Sales by Fabricators to Customers	Actual Copper Consmd. by Fabricators	Excess Fabricators' Stocks Over Orders Bkd.
1954						
Total	360,526	58,125	304,619	136,581	1,231,840	— 22,549
1955						
Total	.....	.....	.....	.....	1,418,241	.....
1956						
Total	.....	.....	.....	.....	1,416,378	.....
1957						
Aug.	429,627	82,768	344,315	144,375	110,323	+ 23,826
Sept.	425,168	80,436	344,530	144,538	106,927	+ 16,536
Oct.	420,130	80,774	341,869	138,420	119,161	+ 20,615
Nov.	428,520	68,249	345,832	128,719	98,725	+ 22,218
Dec.	430,171	75,627	347,465	138,631	83,067	+ 19,702
Total	.....	.....	.....	.....	1,279,086	.....
1958						
Jan.	445,514	57,917	348,426	123,756	94,642	+ 31,249
Feb.	452,673	52,342	351,035	128,330	86,625	+ 25,650
Mar.	448,125	71,693	346,875	141,387	83,694	+ 31,556
Apr.	450,442	76,602	347,607	145,623	79,613	+ 33,814
May	441,001	78,194	346,404	138,190	88,447	+ 34,601
June	433,526	72,383	330,301	145,162	109,011	+ 30,448
July	431,796	77,362	326,263	153,529	79,353	+ 29,366
Aug.	421,931	78,194	323,667	150,436	96,717	+ 26,022
Sept.	416,887	71,025	319,281	145,390	105,474	+ 28,941
Oct.	399,113	91,019	315,929	156,692	138,017	+ 17,511
Nov.	419,914	88,580	328,238	157,799	110,487	+ 22,457
Dec.	447,123	90,401	326,438	177,869	92,573	+ 35,217
Total	....	....	....	....	1,165,364	....
1959						
Jan.	457,387	101,182	337,761	172,698	108,556	+ 44,070
Feb.	459,046	123,321	390,522	183,113	116,565	+ 58,732
Mar.	449,441	130,785	334,904	211,547	133,259	+ 33,775
Apr.	463,582	125,250	337,282	204,618	120,680	+ 46,932
May	474,657	133,694	338,835	210,424	124,060	+ 59,092
June	492,072	111,229	343,585	191,875	133,702	+ 67,841
July	518,699	110,367	357,474	193,338	81,500	+ 68,254
Aug.	487,259	97,786	359,049	191,476	121,563	+ 34,520
Sept.	462,880	111,675	360,760	206,254	116,880	+ 7,541
Oct.	431,612	119,806	347,136	211,359	100,302	— 7,077
Nov.	412,401	127,162	338,856	224,442	102,837	— 23,735
Dec.	414,757	130,324	340,349	202,775	88,706	+ 1,957
Total	....	....	....	....	1,347,610	....
1960						
Jan.	414,652	141,860	340,233	193,300	102,295	+ 22,979
Feb.	423,131	132,696	343,196	165,991	103,072	+ 46,640
Mar.	441,026	119,963	348,081	134,461	108,881	+ 78,447
Apr.	457,070	99,814	357,711	111,062	113,619	+ 88,111
May	457,644	85,491	360,770	117,150	107,838	+ 65,215

Scrap Copper Receipts by Custom Smelters and Refineries in United States*

(In Short Tons)

	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Jan.	6,640	4,528	6,486	9,859	11,047	14,322	17,506	16,024	14,511	15,165
Feb.	5,153	3,633	10,337	8,490	15,198	14,497	11,145	9,518	14,712	14,614
Mar. ...	7,912	5,243	19,991	9,738	12,198	15,921	13,934	11,783	19,522	11,675
Apr.	8,553	6,214	16,583	9,004	13,162	17,233	14,288	15,279	17,525	17,543
May	8,458	8,033	10,857	8,687	15,133	20,805	12,397	13,989	13,960	16,497
June ...	8,628	4,425	10,945	13,309	14,765	14,758	11,949	13,945	15,065	....
July	6,642	5,188	9,063	10,260	9,988	12,632	8,926	12,185	11,144	....
Aug.	6,113	5,003	7,137	10,100	12,197	12,510	11,645	11,896	7,468	....
Sept. ...	3,561	4,667	9,042	10,641	15,037	9,518	9,756	9,268	10,070	....
Oct.	3,336	4,602	10,065	11,662	12,897	15,570	13,151	23,088	12,860	....
Nov.	3,179	4,724	7,815	10,879	9,865	11,369	11,146	16,425	11,773	....
Dec.	4,538	6,208	11,476	14,876	13,180	14,613	11,237	10,796	10,894	....
Total ..	71,812	62,470	129,798	127,449	154,714	173,748	147,080	164,196	159,507	....

* As compiled by Copper Institute.

Brass and Bronze Ingot Monthly Shipments

(NET TONS)

The following figures showing the combined shipments of ingot brass and bronze are compiled by the Ingot Brass and Bronze Industry and represent in excess of 95 per cent of the deliveries of the entire industry.

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Jan.	18,874	28,416	28,315	23,423	20,661	25,201	27,736	25,681	20,468	22,046	22,695
Feb.	18,487	27,168	24,211	25,429	19,920	25,349	24,949	20,769	17,413	23,746	23,129
Mar.	22,494	31,997	23,890	28,256	23,653	29,713	28,310	21,948	18,825	26,109	23,232
Apr.	22,118	30,473	22,547	25,044	24,746	27,641	25,808	23,507	18,009	26,115	20,413
May	23,643	33,267	21,710	21,660	22,269	23,708	23,437	22,037	17,191	23,967	19,885
June	25,093	33,817	21,274	20,818	22,348	23,141	18,842	18,888	17,962	22,922	....
July	21,609	32,016	18,947	19,321	17,074	18,513	17,364	16,695	16,658	20,346	....
Aug.	29,689	25,285	21,807	20,156	21,684	27,013	23,812	19,654	17,882	21,741	....
Sept.	28,811	22,285	22,770	21,463	22,464	26,349	20,929	19,670	20,540	22,685	....
Oct.	32,240	23,124	25,811	22,280	24,080	25,228	23,045	22,800	23,225	23,067	....
Nov.	31,748	23,544	23,441	21,806	23,061	25,102	21,818	19,767	20,758	22,283	....
Dec.	28,575	20,987	22,983	20,541	21,274	21,448	18,046	16,875	18,676	19,535	....
Total	303,563	332,378	277,736	271,251	263,233	298,406	274,096	248,297	227,607	274,562	....
Aver.	25,297	27,615	23,145	22,694	21,936	24,867	22,841	20,681	18,133	22,864	....

Mine Production of Copper in United States

(U. S. Bureau of Mines)

(In short tons)

	Eastern	Missouri	Western	Total
1957				
Ttl.	79,369	1,800	995,753	1,076,922
1958				
Dec.	6,614	70	88,070	94,514
Ttl.	76,849	1,250	902,021	980,304
1959				
Jan.	6,590	126	90,351	97,067
Feb.	5,883	130	81,849	87,862
Mar.	6,513	140	91,681	98,334
Apr.	7,240	150	93,209	100,599
May	7,007	110	94,493	101,610
June	7,245	124	87,035	94,404
July	6,763	111	80,058	86,932
Aug.	6,813	116	47,910	54,839
Sept.	6,655	123	20,342	27,120
Oct.	7,092	152	22,669	29,913
Nov.	3,226	140	22,529	25,895
Dec.	3,228	128	22,504	25,860
Ttl.	74,255	1,550	754,630	830,435
1960				
Jan.	3,904	107	43,845	47,856
Feb.	3,819	114	71,257	75,190
Mar.	7,229	96	88,931	96,256
Apr.	7,149	97	89,956	97,202

Average Custom Smelters' Scrap Buying Prices

(Cents per pound for carload lots del consumers' works)

	No. 1 Copper Scrap	No. 2 Copper Scrap	Light Copper Scrap	Refinery Brass*
1958				
Aver	21.788	20.282	18.035	18.047
1959				
Apr.	28.04	26.50	24.29	26.04
May	27.81	26.31	24.06	25.81
June	26.80	25.30	23.05	24.80
July	25.14	23.64	21.39	23.14
Aug.	25.762	24.762	22.012	23.762
Sept.	26.369	24.869	22.319	24.369
Oct.	27.929	25.405	23.155	24.905
Nov.	30.00	26.208	23.958	24.528
Dec.	29.50	25.993	23.743	24.239
Av.	27.321	25.377	23.102	24.774
1960				
Jan.	30.025	26.30	24.05	24.55
Feb.	29.868	25.75	23.50	24.00
Mar.	27.207	24.038	21.788	22.071
Apr.	27.063	24.256	22.006	22.256
May	26.548	24.369	22.119	22.368

*Of dry content for material having a dry copper content in excess of 60%.

Brass Ingot Makers' Scrap Copper Buying Prices

(Average Prices)

(Cents per pound del. refinery for 60,000 lbs. of each grade)

	No. 1 Copper Scrap	No. 2 Copper Scrap	No. 1 Composition	Heavy Yellow Brass
1958				
Aver.	21.777	20.277	18.653	13.024
1959				
Apr.	28.04	26.54	21.69	15.70
May	27.81	26.31	21.17	15.17
June	26.80	25.30	21.159	15.307
July	25.14	23.64	20.13	14.47
Aug.	25.762	24.262	21.286	14.81
Sept.	26.369	24.869	22.304	16.50
Oct.	27.595	25.405	22.19	16.048
Nov.	29.00	26.208	22.75	16.326
Dec.	28.50	25.993	22.50	16.00
Av.	27.120	25.377	21.567	15.52
1960				
Jan.	29.025	26.30	22.74	16.39
Feb.	28.408	25.75	22.00	16.00
Mar.	27.321	24.038	20.429	15.174
Apr.	27.063	24.256	20.613	15.15
May	26.548	24.369	20.613	15.083

Lead Statistics Reported by American Bureau of Metal Statistics

Lead Refineries in U. S. A. and Outside U. S. A.

(Recoverable Lead Content in Tons of 2,000 Pounds)

Combined U. S. A. and Outside U. S. A.

	REFINED PRODUCTION			DELIVERIES			STOCKS		
1958	Pig	Antimonial Lead Content	Total	Pig	Antimonial Lead Content	Total	Pig	Antimonial Lead Content	Total
Total ..	1,485,282	106,383	1,591,665	1,307,390	102,697	1,410,087	.....	.....	.....
1959									
Oct. ..	101,159	8,583	109,742	112,940	8,808	121,748	276,602	15,729	292,331
Nov. ..	110,295	9,330	119,625	117,420	8,885	126,305	269,477	16,174	285,651
Dec. ..	121,374	8,444	129,818	118,582	4,107	122,689	272,269	20,511	292,780
Total ..	1,406,485	105,943	1,512,418	1,422,985	106,666	1,529,651	.....	.....	.....
1960									
Jan. ..	131,753	9,395	141,148	124,705	7,413	132,118	*281,530	*20,280	301,810
Feb. ..	127,595	8,977	136,572	121,803	9,539	131,342	287,322	19,719	307,041
Mar. ..	128,203	8,490	136,693	122,013	8,327	130,340	293,512	19,882	313,394
Apr. ..	137,979	7,574	145,553	107,128	7,691	114,819	324,400	19,765	344,165
U. S. A.									
1958									
Total ..	473,208	46,985	520,193	589,528	49,893	639,421	.....	.....	.....
1959									
Oct. ..	18,096	697	18,793	35,110	2,290	37,400	167,969	8,150	176,119
Nov. ..	17,785	854	18,639	42,000	2,038	44,038	158,009	7,602	165,611
Dec. ..	27,969	2,052	30,021	41,502	1,745	39,757	154,307	11,552	165,859
Total ..	343,726	34,628	378,354	596,214	42,312	638,526	.....	.....	.....
1960									
Jan. ..	37,497	2,414	39,911	49,498	2,304	51,802	156,215	12,257	168,472
Feb. ..	33,742	2,570	36,312	56,569	2,659	59,228	152,299	12,464	164,763
Mar. ..	35,018	2,070	37,088	40,536	2,289	42,825	158,023	12,399	170,422
Apr. ..	37,465	2,186	39,651	36,752	2,267	38,839	164,875	12,514	177,389
Outside U. S. A.									
1958									
Total ..	1,012,074	59,398	1,071,472	717,862	52,804	710,666	.....	.....	.....
1959									
Oct. ..	83,063	7,886	90,949	77,830	6,518	84,348	108,633	7,579	116,212
Nov. ..	92,510	8,476	100,986	75,420	6,847	82,267	111,468	8,572	120,040
Dec. ..	93,405	6,392	99,797	77,080	5,852	82,932	117,962	8,959	126,921
Total ..	1,062,759	71,315	1,134,074	826,771	64,453	891,125	.....	....	.....
1960									
Jan. ..	94,256	6,981	101,237	75,207	5,109	80,316	*125,315	*8,023	133,338
Feb. ..	93,853	6,407	100,260	65,234	6,880	72,114	135,023	7,255	142,278
Mar. ..	93,185	6,420	99,605	81,477	6,038	87,515	135,489	7,483	142,972
Apr. ..	100,514	5,388	105,902	70,556	5,424	75,980	159,525	7,251	166,776

* Stocks on Jan. 1, 1960 are not comparable to those reported for Dec. 31, 1959 due to changes in the basis by reporting areas.

Summary of Lead Statistics for United States

	Stocks (end of period)					Smelter Receipts			
		Base Bullion				Primary Origin			
Recoverable Lead Content in Tons of 2000 Pounds	Raw Material at Smelter	At Smelter & Transit	At Refinery and Process	Refined Pig and Antimonial	Total	U.S.A.	Outside U.S.A.	Scrap	Total
1958									
December ..	68,197	4,489	28,955	252,466	354,107	25,544	18,921	4,090	43,555
Total	....	....	....	.....	.....	297,687	191,415	29,080	518,182
1959									
September .	61,420	9,609	29,012	171,194	271,235	13,725	11,675	753	26,153
October ...	66,942	7,285	24,758	176,119	275,194	15,837	4,959	1,049	21,845
November ..	70,376	3,617	27,335	165,611	266,939	13,956	5,599	649	20,204
December ..	70,036	4,594	35,288	165,859	275,777	20,125	10,013	2,621	32,759
Total	.....	....	.....	.....	.....	244,803	125,100	20,596	389,999
1960									
January ...	78,131	4,003	37,013	168,472	287,619	21,094	26,442	1,900	49,436
February ...	86,087	2,680	36,748	164,763	290,278	24,719	15,822	2,136	42,677
March	93,108	5,029	36,866	170,422	305,425	29,979	17,105	2,128	49,212
April	89,421	3,639	39,950	177,389	310,399	27,863	9,264	2,207	39,334

		Refined Productions			Deliveries to U. S. Fabricators including imports from U. S. sources reporting to ABMS		
1958	Smelter Production	Pig	Antimonial	Total	Pig	Antimonial	Total
Total	512,323	473,208	46,985	520,193	589,528	49,893	639,421
1959							
August	26,698	23,404	2,091	25,495	55 094	7,397	62,491
September	13,995	14,699	88	14,787	37,310	543	37,853
October	16,315	18,096	697	18,793	35,110	2,290	37,400
November	16,770	17,785	854	18,639	42,000	2,038	44,038
December	32,676	27,969	2,052	30,021	41,507	1,745	39,757
Total	381,656	343,726	34,628	378,354	596,214	42,312	638,526
1960							
January	40,593	37,497	2,414	39,911	49,498	2,304	51,802
February	34,326	33,742	2,570	36,312	56,569	2,659	59,228
March	41,673	35,018	2,070	37,088	40,536	2,289	42,825
April	42,436	37,465	2,186	39,651	36,572	2,267	38,839

United States Lead Statistics of Primary Refineries

(American Bureau of Metal Statistics)
(In tons of 2,000 lbs.)

	Stock At Beginning	Production Primary & Secondary	Total Supply	Stock At End	Domestic Shipments
1954	81,152	551,618	632,770	92,719	475,551
1955	28,855	547,153	639,872	31,089	531,339
1956	.....	613,293	644,382	.....	529,484
1957	.....	604,353	645,534	.....	463,060
1958					
September	169,302	43,269	212,571	170,666	41,657
October	170,666	45,467	216,133	169,435	46,647
November	169,435	40,485	209,920	179,321	30,591
December	179,321	44,042	223,363	198,538	24,852
Total	....	522,956	614,554	....	380,359
1959					
January	198,508	43,652	242,160	208,874	33,035
February	208,874	39,498	248,372	214,946	30,685
March	214,946	39,238	254,184	210,524	40,980
April	210,524	40,606	251,130	197,823	52,469
May	197,823	39,101	236,924	171,577	65,207
June	171,577	37,459	209,036	133,235	75,465
July	133,235	32,882	166,117	142,694	22,380
August	142,694	25,589	168,283	124,259	43,850
September	124,259	14,801	139,060	117,296	21,795
October	117,296	18,892	136,188	115,418	20,552
November	115,418	18,796	134,214	114,303	19,869
December	114,303	30,160	144,463	119,993	24,516
Total	....	380,674	579,182	....	450,983
1960					
January	119,993	40,043	160,036	117,589	42,083
February	117,589	36,435	154,024	116,269	37,599
March	116,269	37,192	153,461	109,148	44,076
April	109,148	40,177	149,325	118,329	30,686

In instances where the figures are not in balance it is due to shipments to other than domestic consumers.

Industrial Classification of Domestic Lead Shipments

(American Bureau of Metal Statistics) (In tons of 2,000 lbs.)

	Cable	Amm.	Foil	Batt'y	Brass Making	Sundries	Jobbers	Unclassified
1955								
Total	72,418	27,599	2,622	88,461	3,960	52,994	13,034	270,251
1956								
Total	80,360	24,501	1,435	70,614	3,158	56,851	13,213	274,716
1957								
Dec.	2,499	1,350	36	2,820	270	2,607	529	13,997
Total	58,444	25,452	1,691	64,761	7,420	53,284	11,127	240,881
1958								
Jan.	2,938	550	70	4,775	521	5,173	801	18,594
Feb.	2,899	1,750	70	5,124	90	1,643	888	11,368
Mar.	3,133	1,200	35	4,711	681	3,149	908	15,068
April	3,207	900	70	3,138	580	2,831	533	10,913
May	3,216	1,850	35	4,671	866	3,071	1,027	15,285
June	3,463	1,950	35	2,767	480	4,217	1,716	17,450
July	3,169	1,250	275	3,936	515	4,157	1,052	17,594
Aug.	3,481	2,415	70	4,992	400	6,399	100	16,397
Sept.	4,132	2,290	320	5,775	848	6,771	1,747	19,774
Oct.	3,243	2,450	...	4,548	285	6,210	1,641	28,270
Nov.	3,690	2,150	50	6,527	360	4,887	822	12,105
Dec.	2,267	2,100	50	6,216	215	2,578	652	10,774
Total	38,838	20,855	1,080	57,180	5,841	51,086	11,882	193,592
1959								
Jan.	2,284	2,100	100	5,594	161	3,545	727	18,524
Feb.	2,988	1,225	50	5,254	735	2,706	931	16,796
Mar.	3,156	1,850	105	5,905	378	6,006	2,185	21,395
April	3,686	2,150	35	7,410	691	5,356	1,966	31,355
May	4,054	2,900	35	6,870	475	7,990	2,843	40,040
June	5,272	3,210	70	12,515	180	8,009	3,663	42,546
July	850	295	70	2,570	315	3,166	997	14,117
Aug.	3,268	1,150	205	3,073	410	6,640	1,921	27,183
Sept.	1,003	....	35	3,401	255	2,296	1,484	13,321
Oct.	700	500	35	4,299	228	2,676	1,021	11,093
Nov.	2,630	200	70	3,714	205	2,566	797	9,687
Dec.	2,133	950	70	3,479	475	2,628	738	14,043
Total	32,024	16,530	880	64,084	4,508	53,584	19,273	260,100
1960								
Jan.	2,138	3,352	105	3,268	550	4,786	1,106	26,778
Feb.	2,665	2,350	50	4,930	295	3,715	574	23,020
Mar.	2,221	1,500	...	8,195	1,050	8,298	2,133	20,679
Apr.	2,005	2,707	83	8,891	380	5,180	916	16,519

Lead Prices at New York

(Common Grade)
Monthly Average Prices
(Cents Per Pound)

	1957	1958	1959	1960
Jan.	16.00	13.00	12.619	12.00
Feb.	16.00	13.00	11.583	12.00
Mar.	16.00	13.00	11.42	12.00
Apr.	16.00	12.00	11.20	12.00
May	15.385	11.712	11.905	12.00
June	14.32	11.24	12.00	...
July	14.00	11.00	12.00	...
Aug.	14.00	10.85	12.286	...
Sept.	14.00	10.89	13.00	...
Oct.	13.704	12.673	13.00	...
Nov.	13.50	13.00	13.00	...
Dec.	13.00	13.00	12.523	...
Aver.	14.66	12.114	12.211	...

Lead Sheet Prices

(To Jobbers, Full Sheets)
Monthly Average Prices
(Cents Per Pound)

	1957	1958	1959	1960
Jan.	21.50	18.50	18.119	17.50
Feb.	21.50	18.50	17.083	17.50
Mar.	21.50	18.50	16.92	17.50
Apr.	21.50	17.50	16.70	17.50
May	20.885	17.212	17.405	17.50
June	19.82	16.74	17.50	...
July	19.82	16.50	17.50	...
Aug.	19.50	16.35	17.786	...
Sept.	19.50	16.39	18.50	...
Oct.	19.204	18.173	18.50	...
Nov.	19.00	18.50	18.50	...
Dec.	18.50	18.50	18.023	...

Battery Shipments

The following table shows replacement battery shipments in the United States as compiled by the Business Information Division of Dun & Bradstreet, Inc., for the Association of American Battery Manufacturers:

(In thousands of units)

	1957	1958	1959	1960
Jan.	2,638	2,004	2,672	1,866
Feb.	1,961	1,803	1,791	1,641
Mar.	1,254	1,577	1,376	1,877
Apr.	1,178	1,242	1,437	1,548
May	1,605	1,454	1,593	....
June	1,878	1,773	2,118	....
July	2,469	2,101	2,556	....
Aug.	2,856	2,333	2,728	....
Sept.	2,688	2,704	2,889	....
Oct.	3,042	2,976	3,069	....
Nov.	2,359	2,262	2,799	....
Dec.	2,015	3,041	2,465	....
Total	25,943	25,270	27,493	....

Lead Stocks at Primary U. S. Smelters and Refiners

(American Bureau of Metal Statistics)
(In tons of 2,000 lbs.)

	In ore and matte and in process at smelteries	—In base bullion (lead content)— At smelteries & refineries	In transit to refineries	In process at refineries	Refined pig lead	Anti-monial lead	Total Stocks
1958							
Mar. 1..	79,588	9,546	3,670	22,834	107,213	12,309	235,250
Apr. 1..	83,185	10,692	2,187	21,766	116,610	12,144	246,584
May 1..	86,053	11,838	2,138	20,524	130,668	12,468	263,689
June 1..	79,482	11,059	2,010	20,188	141,967	13,154	267,860
July 1..	80,060	9,012	1,570	22,092	150,648	12,856	276,238
Aug. 1..	83,347	12,438	860	21,615	154,378	10,482	283,379
Sept. 1.	77,416	14,767	1,176	20,444	158,413	10,889	283,105
Oct. 1..	72,724	14,797	2,223	18,125	159,662	11,004	278,535
Nov. 1..	61,819	11,492	1,086	19,041	157,385	12,050	262,873
Dec. 1..	62,960	11,072	1,565	20,941	167,493	11,828	275,859
1959							
Jan. 1..	72,378	10,917	1,767	19,746	185,913	12,595	303,316
Feb. 1..	72,832	10,565	1,889	21,317	197,085	11,789	315,477
Mar. 1..	62,383	11,707	1,447	21,479	202,835	12,111	311,962
Apr. 1..	68,433	14,352	350	20,575	198,459	12,065	314,234
May 1..	64,538	12,373	624	20,507	184,468	13,355	295,865
June 1..	55,223	12,239	766	20,391	157,981	13,596	260,196
July 1..	58,451	13,270	943	19,468	120,914	12,321	225,367
Aug. 1..	53,115	18,379	158	18,021	129,551	13,143	232,367
Sept. 1.	50,007	17,389	....	15,638	116,344	7,915	207,293
Oct. 1..	61,910	17,925	....	14,932	109,527	7,769	212,063
Nov. 1..	69,429	14,800	...	14,919	107,849	7,569	214,566
Dec. 1..	70,837	12,919	...	15,708	106,678	7,625	213,767
1960							
Jan. 1..	73,381	16,955	3,085	16,914	108,002	11,991	230,328
Feb. 1..	78,315	17,139	1,425	19,003	105,292	12,297	233,471
Mar. 1..	89,656	14,899	1,643	19,360	103,615	12,654	241,827
Apr. 1..	96,716	17,043	867	20,603	96,469	12,679	244,377
May 1..	92,969	16,519	1,581	22,124	105,498	12,831	251,522

Receipts of Lead in Ore and Scrap

By U. S. Smelters (a)

(American Bureau of Metal Statistics) (In tons of 2,000 lbs.)

	——Receipts of lead in ore—— United States	Foreign	Total	Receipts of lead in scrap etc. (b)	Total receipts in ore, & scrap
1953 Total	351,183	155,788	506,971	42,994	549,965
1954 Total	336,291	158,081	494,372	49,864	544,236
1955 Total	341,595	172,966	514,561	42,996	557,557
1956 Total	368,499	192,318	560,817	55,925	616,792
1957 Total	356,409	206,901	563,310	42,537	605,847
1958					
March	21,735	20,038	41,773	3,154	44,927
April	25,104	15,821	40,925	1,913	42,838
May	27,427	10,228	37,655	1,867	39,522
June	28,577	13,811	42,388	1,366	43,754
July	22,289	19,692	41,891	1,615	43,596
August	22,984	13,043	36,027	1,252	37,279
September	20,654	14,576	35,230	1,765	36,995
October	18,678	9,093	27,771	3,577	31,348
November	24,024	14,541	38,565	3,933	42,498
December	24,366	18,804	43,170	3,982	47,152
Total	285,164	188,144	473,308	30,115	503,423
1959					
January	24,304	19,449	43,753	3,138	46,891
February	22,253	8,660	30,913	1,747	32,660
March	21,897	21,012	42,909	1,328	44,237
April	22,339	10,998	33,337	1,196	34,533
May	21,645	5,202	26,847	1,930	28,777
June	23,634	12,368	36,002	2,431	38,433
July	19,165	11,695	30,860	2,199	33,059
August	19,971	2,821	22,792	1,009	23,801
September	13,591	3,465	17,056	32	17,088
October	14,740	3,648	18,388	133	18,521
November	13,808	4,582	18,390	133	18,523
December	21,208	20,977	42,185	5,269	47,454
Total	238,555	124,877	363,432	20,545	383,977
1960					
January	20,531	26,307	46,838	1,762	48,600
February	23,700	15,541	39,241	2,131	41,372
March	28,824	16,742	45,566	1,838	47,404
April	26,574	9,243	35,817	1,897	37,714

(a) Receipts of lead in ore are computed on the basis of recoverable lead. Owing to the estimational factor in this, which is probably on the low side, and also to the possibility that some lead receipts may escape attention, these monthly totals probably underrun the actual production of pig lead. (b) Inclusive only of scrap smelted in connection with ore, plus some scrap received by primary refiners.

N. Y. Lead Price Changes

(Effective Date)

1951		Apr. 12	14.00
Oct. 2	**19.00	June 2	14.25
1952		June 15	14.00
Apr. 29	18.00	Aug. 25	14.25
May 2	17.00	Sept. 7	14.50
May 12	15.00	Sept. 15	14.75
June 23	15.50	Oct. 4	14.875
June 24	16.00	Oct. 5	15.00
Oct. 7	15.00	1955	
Oct. 14	14.00	Sept. 23	15.00-15.50
Oct. 22	13.50	Sept. 26	15.50
Nov. 3	14.00	Dec. 29	16.00
Nov. 10	14.20	1956	
Nov. 11	14.50	Jan. 4	16.50
Nov. 20	14.25	Jan. 13	16.00
Nov. 24	14.00	1957	
Dec. 22	14.25	May 9	15.50
Dec. 29	14.50	May 16	15.00
Dec. 31	14.75	June 11	14.00
1953		Oct. 14	13.50
Jan. 7	14.50	Dec. 2	13.00
Jan. 12	14.00	1958	
Feb. 2	13.50	Apr. 1	12.00
Mar. 4	13.00	May 14	11.50
Mar. 10	13.50	June 3	11.00
Apr. 7	13.00	June 18	11.50
Apr. 16	12.50	July 1	11.00
Apr. 21	12.00	Aug. 13	10.75
Apr. 29	12.50	Sept. 17	11.00
May 18	12.75	Sept. 30	11.50
May 19	13.00	Oct. 2	12.00
May 26	13.15	Oct. 8	12.50
June 11	13.50	Oct. 14	13.00
July 20	13.75	1959	
July 23	14.00	Jan. 21	12.00
Sept. 16	13.50	Feb. 11	11.50
1954		Feb. 24	11.00
Jan. 18	13.00	Mar. 5	11.50
Feb. 18	12.50	April 1	11.00
Mar. 9	12.75	April 20	11.50
Mar. 10	13.00	May 7	12.00
Mar. 26	13.25	Aug. 24	13.00
Mar. 29	13.50	Dec. 14	12.50
Apr. 1	13.75	Dec. 21	12.00

**OPS Ceiling.

Antimonial Lead Stocks at Primary Refineries

(A.B.M.S.)

(In tons of 2,000 pounds)

End of	1957	1958	1959	1960
Jan.	10,487	12,689	11,789	12,297
Feb.	10,220	12,309	12,111	12,654
Mar.	5,091	3,527	4,098	2,332
Apr.	9,391	12,468	13,355	12,831
May	9,799	13,154	13,596	....
June	9,503	12,856	12,321	....
July	8,661	10,482	13,143	....
Aug.	9,553	10,889	7,915	....
Sept.	10,215	11,004	7,769	....
Oct.	11,581	12,050	7,569	....
Nov.	11,119	11,828	7,625	....
Dec.	11,857	12,595	11,991	....

Antimonial Lead Production by Primary Refineries

(A.B.M.S.)

(In tons of 2,000 pounds)

End of	1957	1958	1959	1960
Jan.	5,114	3,743	3,541	2,538
Feb.	5,468	3,657	4,415	2,694
Mar.	9,794	12,144	12,065	12,679
Apr.	6,183	3,655	5,533	2,291
May	6,978	4,827	4,618	....
June	4,466	3,992	5,671	....
July	5,372	2,775	2,784	....
Aug.	7,967	5,244	2,185	....
Sept.	7,574	4,761	102	....
Oct.	6,148	5,849	886	....
Nov.	3,791	3,913	1,324	....
Dec.	3,290	4,539	2,656	....
Total	67,541	50,482	37,813	....

Lead Imports and Exports By Principal Countries

(A.B.M.S.)

Reported in pigs, bars, etc.; metric tons except where otherwise noted.

	1960		
	Jan.	Feb.	Mar.
IMPORTS			
U. S.* (s.t.)	19,854	15,511	17,727
Canada (s.t.)	4	...	...
Belgium	1,295	...	...
Denmark	2,077	405	1,514
France	3,200	6,049	5,948
Germany, W.‡	8,527	...	...
Italy††	1,625	...	...
Netherlands	1,854	2,863	2,908
Norway	1,182	417	...
Sweden	2,103	725	876
Switzerland	1,498	1,534	1,592
U. K. (l.t.)	13,062	13,052	16,125
India† (l.t.)	1,190	1,658	...
EXPORTS			
U. S.* (s.t.)	13	6	40
Canada (s.t.)	5,549	6,692	11,216
Belgium	3,723	...	...
Denmark	503	620	480
France	674	767	781
Germany, W.‡	2,149	...	...
Netherlands	218	477	706
Sweden	74	119	100
Northern Rhodesia† (l.t.)	985	1,376	1,357
Australia (l.t.)	12,118	11,260	8,933

† British Bureau of Non-Ferrous Metal Statistics.
* Refined.
‡ Includes scrap.
†† Includes lead alloys.

French Lead Imports

(A. B. M. S.)

(In metric tons)

	1960		
	Feb.	Mar.	Apr.
Ore (gross weight)	13,151	30,905	9,576
Algeria	662	1,811	1,752
Morocco	11,439	27,044	7,824
Other countries	1,050	2,050	...
Pig lead	6,049	5,948	3,555
Belgium	2,052	944	490
Germany (W.)	1,075	864	795
Spain	29	71	...
U Kingdom	...	1	...
Algeria	215	16	2
Morocco	2,166	2,313	801
Tunisia	231	1,739	1,061
Australia	280	...	...
Other countries	1	...	...
Peru	...	...	406
Antimonial lead	150	2	...

U. K. Lead Imports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	1960		
	Feb.	Mar.	Apr.
(Gross Weight) Lead and lead alloys	13,052	16,125	22,979
Australia	8,618	8,460	14,202
Canada	2,056	4,770	5,397
Yugoslavia	300	...	...
Peru	250	300	824
Other countries	1,828	2,595	2,556

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in the
DAILY METAL REPORTER

U. S. Lead Consumption

(Bureau of Mines — In Short Tons)

	1960		
Metal Products:	Jan.-Mar.	Feb.	Mar.
Ammunition	11,095	3,823	4,104
Bearing metals	5,993	1,951	2,008
Brass and bronze	6,079	2,008	2,097
Cable covering	16,750	5,780	5,798
Calking lead	15,679	5,324	5,000
Casting metals	1,899	668	622
Collapsible tubes	1,929	607	752
Foil	844	255	215
Pipes, traps and bends	5,811	2,074	1,956
Sheet lead	6,423	2,182	2,228
Solder	15,546	5,111	5,430
Storage battery grids, posts, etc.	43,283	13,765	14,833
Storage battery oxides	44,135	14,890	14,303
Terne metal	614	205	257
Type metal	6,754	2,207	2,345
Total	**182,834**	**60,850**	**61,948**
Pigments:			
White lead	1,581	553	810
Red lead and litharge	21,387	7,149	7,095
Pigment colors	3,036	1,031	1,025
Other*	572	191	221
Total	**26,576**	**8,924**	**9,151**
Chemicals:			
Tetraethyl lead	39,792	10,725	15,129
Misc. chemicals	285	46	208
Total	**40,077**	**10,771**	**15,337**
Miscellaneous uses:			
Annealing	1,330	525	352
Galvanizing	441	143	111
Lead plating	16	8	2
Weights and ballast	1,755	573	656
Total	**3,542**	**1,249**	**1,121**
Other uses unclassified	4,416	1,296	1,534
Total reported†	**257,445**	**83,090**	**89,091**
Estimated unreported consumption	6,000	2,000	2,000
Grand total†	**263,400**	**85,100**	**91,100**
Daily average‡	**2,895**	**2,934**	**2,939**

* Includes lead content of leaded zinc oxide production.
† Includes lead content of scrap used directly in fabricated products.
‡ Based on number of days in month without adjustment for Sundays and holidays.

U. K. Lead Consumption

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 pounds)

	1958	1959	1960
Jan.	29,607	28,872	31,745
Feb.	27,855	25,968	30,241
Mar.	29,713	26,691	35,066
Apr.	26,230	29,252	28,148
May	28,839	27,280	...
June	28,624	30,099	...
July	27,201	26,851	...
Aug.	21,726	25,358	...
Sept.	28,829	30,255	...
Oct.	31,356	32,926	...
Nov.	27,786	32,579	...
Dec.	27,154	31,772	...
Total	**335,920**	**345,903**	

American Antimony

Monthly Average Prices
In bulk, f.o.b. Laredo
(Cents per lb. in ton lots)

	1957	1958	1959	1960
Jan.	33.00	33.00	29.00	29.00
Feb.	33.00	30.818	29.00	29.00
Mar.	33.00	29.00	29.00	29.00
Apr.	33.00	29.00	29.00	29.00
May	33.00	29.00	29.00	29.00
June	33.00	29.00	29.00	...
July	33.00	29.00	29.00	...
Aug.	33.00	29.00	29.00	...
Sept.	33.00	29.00	29.00	...
Oct.	33.00	29.00	29.00	...
Nov.	33.00	29.00	29.00	...
Dec.	33.00	29.00	29.00	...
Aver.	**33.00**	**29.485**	**29.00**	...

Consumers' Lead Stocks, Receipts and Consumption

(Bureau of Mines — In Short Tons)

	Stocks Feb. 29, 1960	Net Receipts In Mar.	Consumed In Mar.	Stocks Mar. 31, 1960
Soft lead	78,982	58,029	59,116	77,895
Antimonial lead	40,698	21,672	21,265	41,105
Lead in alloys	6,090	4,670	3,827	6,933
Lead in copper-base scrap	818	1,591	1,645	764
Total	126,588	85,962	*85,853	126,697

* Excludes 3,024 tons of lead which went directly from scrap to fabricated products and 214 tons of lead contained in leaded zinc oxide production.

Consumption of Lead by Class of Product

(Bureau of Mines — In Short Tons)

MARCH

	Soft lead	Antimonial lead	Lead in alloys	Lead in copper-base scrap	Total
Metal products	32,963	20,631	3,779	1,645	59,018
Pigments	8,930	7	....	....	8,937
Chemicals	15,335	2	....	....	15,337
Miscellaneous	611	510	....	....	1,121
Unclassified	1,277	115	48	....	1,440
Total	59,116	21,265	3,827	1,645	*85,853

* Excludes 3,024 tons of lead which went directly from scrap to fabricated products and 214 tons of lead contained in leaded zinc oxide production.

Domestic Zinc Statistics

American Zinc Institute

Commencing with January, 1948, all regularly operating U. S. primary and secondary smelters are included in this report. Production from foreign ores also is included.

(Tons of 2,000 lbs.)

	Stock Beginning	Production	Shipments: Domestic	Export & Drawback	Gov't Acc't	Total	Stock at End	Daily Avg. Prod.
1950 Tl.	94,221	910,354	849,246	18,189	128,256	995,691	8,884	2,494
1950 Mo. Avg.		75,863	70,770	1,516	10,688	82,974		
1951 Total	8,884	931,833	836,800	42,067	39,949	918,816	21,901	2,553
1951 Mo. Avg.		77,653	69,733	3,506	3,329	76,568		
1952 Total	21,901	961,430	803,343	56,202	36,626	896,171	87,160	2,627
1952 Mo. Avg.		80,119	66,945	4,683	3,052	74,681		
1953 Total	87,160	971,191	818,850	16,326	42,332	877,508	180,843	2,661
1953 Mo. Avg.		80,933	68,238	1,361	3,528	73,126		
1954 Total	180,843	868,242	787,922	27,929	108,957	924,808	124,277	2,379
1954 Mo. Avg.		72,353	65,660	2,327	9,080	77,067		
1955 Total	40,979	1,031,018	1,007,619	19,497	87,200	1,114,316	40,979	2,825
1955 Mo. Avg.		85,918	83,968	1,625	7,267	92,860		
1956 Total		1,062,954	869,270	9,027	157,014	1,035,311	63,622	2,904
1956 Mo. Avg.		88,850	72,439	752	13,085	86,275		
1957 Total		1,067,450	765,132	15,460	179,466	815,567		
1958								
May	221,171	71,018	51,390	129	....	51,519	240,670	2,291
June	240,670	66,967	54,487	171	....	54,658	252,979	2,232
July	252,979	65,119	60,312	55	....	60,187	257,911	2,101
August	257,911	62,927	68,718	591	....	69,309	251,529	2,030
September	251,529	63,705	76,905	213	....	77,118	238,116	2,124
October	238,116	65,304	93,018	226	....	93,224	210,176	2,107
November	210,176	65,174	83,394	212	....	83,606	191,744	2,172
December	191,744	75,503	76,862	148	....	77,010	190,237	2,432
1958 Total		828,902	767,755	3,102	34,488	805,325	....	....
1959								
January	190,237	76,481	70,770	171	....	70,941	195,777	2,467
February	195,777	71,174	65,641	849	....	66,490	200,461	2,542
March	200,461	79,918	73,814	482	....	74,296	206,083	2,578
April	206,083	76,393	78,358	255	....	78,613	203,863	2,546
May	203,863	77,489	85,073	275	....	85,348	196,004	2,500
June	196,004	75,544	99,858*	204	2,100	102,162	169,386	2,518
July	169,386	73,101	59,460	94	900	60,454	182,033	2,358
August	182,033	69,768	58,918	864	....	59,782	192,019	2,251
September	192,019	62,202	57,971	3,214	....	61,185	193,036	2,073
October	193,036	63,938	63,910	1,813	....	65,723	191,251	2,063
November	191,251	62,346	74,596	2,844	....	77,440	176,157	2,078
December	176,157	69,666	84,498	6,906	....	91,404	154,419	2,247
1959 Total		858,020	872,867	17,971	3,000	893,838	....	....
1960								
January	154,419	73,326	79,325	3,949	....	83,274	144,471	2,365
February	144,471	74,738	78,029	4,118	....	82,147	137,062	2,577
March	137,062	86,028	80,760	5,764	....	86,524	136,566	2,775
April	136,566	83,221	64,251	7,675	....	71,926	147,861	2,774
May	147,861	79,216	54,640	7,399	....	62,039	165,038	2,555

* Inflated by abnormal shipments on consignment of approximately 9,000 tons.

U. S. Consumption of Slab Zinc

Bureau of Mines

By Industries (Short Tons)

	Galvanizers	Die Casters	Brass products	Rolled zinc	Zinc oxide & other	Total
1951 Total	386,373	266,442	141,456	64,000	28,738	887,009
1952 Total	375,563	236,022	155,311	51,508	30,885	849,289
1953 Total	403,162	305,346	177,901	53,784	35,037	977,636
1954 Total	398,599	286,817	107,293	45,979	33,342	876,130
1955 Total	439,694	404,790	144,816	50,363	39,302	1,081,468
1956 Total	421,218	352,451	122,395	45,382	36,251	983,097
1957 Total	355,796	358,543	111,114	39,544	20,486	924,063
1958						
March	27,171	19,045	6,871	3,138	1,724	59,978
April	27,464	17,829	6,392	3,259	1,295	58,432
May	30,935	18,316	6,597	2,896	2,263	61,907
June	34,377	21,497	6,643	2,961	2,212	67,690
July	30,677	17,387	6,275	2,848	1,920	60,007
August	34,663	20,382	8,358	3,379	1,901	70,033
September	34,048	25,188	9,624	3,458	770	74,122
October	36,513	27,682	11,753	3,845	881	81,919
November	31,658	27,311	10,067	3,276	826	74,302
December	31,746	29,926	10,529	3,681	1,018	78,082
Total	370,441	273,540	92,906	38,690	16,772	737,942
1959						
January	31,729	29,110	11,172	3,874	2,521	79,506
February	31,672	26,448	11,508	3,418	2,864	77,010
March	37,287	29,286	12,889	3,629	3,203	87,394
April	38,541	31,262	12,304	3,715	3,223	90,145
May	38,788	29,169	12,015	3,316	3,305	88,093
June	40,531	36,269	10,764	3,801	3,120	95,985
July	23,700	28,120	7,558	2,509	2,042	65,429
August	13,763	29,803	10,064	3,160	2,161	60,451
September	13,181	31,463	10,842	3,322	2,237	62,545
October	13,582	35,473	10,543	3,272	2,487	66,857
November	25,456	29,351	8,858	3,411	2,523	71,099
December	38,418	34,576	8,704	3,152	2,936	89,286
Total	346,648	370,330	127,221	40,759	22,622	933,800
1960						
January	38,389	31,813	9,838	3,130	3,352	88,122
February	35,001	34,829	9,259	3,250	3,156	87,365
March	36,206	31,889	10,108	3,309	3,403	86,515

Prime Western Zinc Prices

(East St. Louis, f.o.b.)

(Cents Per Pound)

(In tons of 2,240 pounds)

	1957	1958	1959	1960
Jan.	13.50	10.00	11.50	12.90
Feb.	13.50	10.00	11.411	13.00
Mar.	13.50	10.00	11.00	13.00
Apr.	13.50	10.00	11.00	13.00
May	11.933	10.00	11.00	13.00
June	10.84	10.00	11.00	...
July	10.00	10.00	11.00	...
Aug.	10.00	10.00	11.00	...
Sept.	10.00	10.00	11.381	...
Oct.	10.00	10.865	12.233	...
Nov.	10.00	11.386	12.50	...
Dec.	10.00	11.50	12.50	...
Aver.	11.40	10.313	11.46	...

High Grade Zinc Prices

(Delivered)

N. Y. Monthly Averages

(Cents Per Pound)

	1957	1958	1959	1960
Jan.	14.85	11.35	12.50	14.244
Feb.	14.85	11.35	12.411	14.25
Mar.	14.85	11.35	12.00	14.25
Apr.	14.85	11.084	12.00	14.50
May	13.283	11.00	12.00	14.50
June	12.19	11.00	12.00	...
July	11.35	11.00	12.00	...
Aug.	11.35	11.00	12.006	...
Sept.	11.35	11.00	12.625	..
Oct.	11.35	11.865	13.483	...
Nov.	11.35	12.386	13.75	...
Dec.	11.35	12.50	13.75	...
Aver.	12.75	11.407	12.544	.

U. K. Zinc Consumption

(British Bureau of Non-Ferrous Metal Statistics)

(In Tons of 2,240 Pounds)

	1958	1959	1960
Jan.	27,473	27,849	30,637
Feb.	24,551	25,676	30,480
Mar.	26,967	27,243	35,268
Apr.	24,984	28,006	28,069
May	24,579	26,167	...
June	25,587	30,221	...
July	23,794	26,318	...
Aug.	19,076	21,566	...
Sept.	26,747	31,270	...
Oct.	29,838	30,686	...
Nov.	26,432	29,221	...
Dec.	26,042	30,829	...
Total	306,070	335,890	...

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DAILY METAL REPORTER

Mine Production of Zinc in United States

(U. S. Bureau of Mines)

(In short tons)

	Eastern States	Central States	Western States	Total U.S.*
1954				
Total	166,487	63,100	234,942	464,539
1955				
Total	163,230	73,630	277,811	514,671
1956				
Total	175,310	61,080	301,253	537,643
1957				
Total	196,877	29,506	290,151	520,128
1958				
Dec.	15,064	——	16,939	32,003
Total	180,373	10,050	221,582	412,005
1959				
Jan.	16,446	——	19,114	35,560
Feb.	16,881	——	19,292	36,104
Mar.	18,266	——	18,817	37,183
Apr.	19,198	——	19,132	38,330
May	19,150	——	19,201	38,351
June	18,217	——	18,447	36,664
July	13,158	——	18,656	31,814
Aug.	14,410	140	16,661	31,211
Sept.	14,226	154	15,026	29,406
Oct.	15,608	200	15,979	31,487
Nov.	18,285	200	15,698	34,183
Dec.	19,609	106	15,757	35,472
Total	204,384	800	211,781	416,965
1960				
Jan.	20,962	226	15,795	36,983
Feb.	21,001	195	16,823	38,019
Mar.	22,794	347	19,725	42,866
Apr.	22,699	606	18,930	42,235

*Includes Alaskan output in some months.

Mine Production of Lead in United States

(U. S. Bureau of Mines)

(In short tons)

	Eastern States	Central States	Western States	Total U.S.*
1953				
Ttl.	9,970	136,650	188,776	335,412
1954				
Ttl.	8,608	138,940	169,804	317,352
1955				
Ttl.	10,379	145,640	177,409	333,409
1956				
Ttl.	11,395	141,900	195,034	348,329
1957				
Ttl.	9,300	135,800	188,392	333,493
1958				
Ttl.	6,439	118,114	142,824	267,377
1959				
Jan.	549	9,748	12,239	23,536
Feb.	611	8,457	12,314	21,382
Mar.	601	7,943	12,426	20,970
Apr.	454	8,103	12,684	21,241
May	412	7,253	12,509	20,174
June	458	8,185	12,764	21,407
July	369	8,190	11,010	19,569
Aug.	353	9,762	11,735	21,850
Sept.	510	9,698	10,328	20,536
Oct.	548	10,012	10,755	21,315
Nov.	620	9,350	10,954	20,924
Dec.	550	8,734	10,572	19,856
Ttl.	6,535	105,435	141,290	253,260
1960				
Jan.	535	9,035	11,235	20,805
Feb.	555	9,611	12,267	22,433
Mar.	619	11,146	13,695	25,460
Apr.	647	9,716	13,390	23,753

Mine Production of Gold in United States

(U. S. Bureau of Mines)

(In fine ounces)

	Eastern States	Western States	Alaska*	Total
1955				
Ttl.	2,026	1,634,625	247,535	1,884,186
1956				
Ttl.	1,998	1,607,930	204,300	1,814,228
1957				
Ttl.	2,174	1,556,450	210,000	1,768,624
1959				
Jan.	—	——	——	143,374
Feb.	—	——	——	128,932
Mar.	—	——	537	135,934
Apr.	—	——	2,956	141,777
May	—	——	9,719	157,338
June	—	——	23,792	163,057
July	—	——	33,324	171,749
Aug.	—	——	37,534	146,907
Sept.	—	——	30,886	114,364
Oct.	—	——	29,349	117,314
Nov.	—	——	2,903	91,175
Dec.	—	——	17,294	106,525
Ttl.	—	——	188,294	1,618,446
1960				
Jan.	—	——	2,460	——
Feb.	—	——	1,064	108,652
Mar.	—	——	231	120,928
Apr.	—	——	43	121,017

* Alaska totals based on mint and smelter receipts.

Mine Production of Recoverable Silver in United States

(U. S. Bureau of Mines)

(In Fine Ounces)

	Eastern States	Missouri	Western States	Alaska*	Total
1957 Total	610,386	240,000	37,018,950	26,000	37,895,336
1958					
Total	†	210,000	†	28,000	33,022,225
1959					
February	†	18,060	†	....	2,908,630
March	†	17,200	†	67	2,982,254
April	†	17,600	†	421	2,963,775
May	†	15,900	†	1,201	3,046,085
June	†	17,900	†	2,953	2,926,886
July	†	8,900	†	4,149	2,905,320
August	†	10,600	†	5,523	2,291,540
September	†	10,400	†	3,224	1,794,029
October	†	10,900	†	3,793	1,952,629
November	†	10,400	†	469	1,874,624
December	†	10,140	†	2,334	1,825,198
Total	†	169,000	†	24,134	30,349,334
1960					
January	†	18,300	†	321	1,962,523
February	†	200	†	312	2,370,150
March	†	100	†	17	2,858,903
April	†	100	†	5	2,989,208

† Figures not available. * Alaska totals based on mint and smelter receipts.

U. S. Silver Production*

(A.B.M.S.)

(In thousands of ounces; commercial bars, 0.999 fine, and other refined forms)

	Dom.†	For.	Total
1954 Total	38,059	39,422	77,481
1955 Total	33,101	32,780	65,881
1956 Total	38,157	40,160	78,317
1957 Total	36,279	34,932	71,211
1958			
December	3,275	3,652	7,236
Total	35,691	37,572	73,263
1959			
January	2,330	4,460	6,790
February	2,827	2,913	5,740
March	2,823	4,087	6,910
April	2,946	3,233	6,179
May	2,641	3,484	6,125
June	3,219	3,231	6,450
July	2,609	3,284	5,893
August	1,472	1,229	2,701
September	390	577	967
October	510	610	1,120
November	635	602	1,237
December	756	4,311	5,067
Total	23,158	32,021	55,179
1960			
January	3,327	2,830	6,157
February	3,454	3,496	6,950
March	4,010	4,259	8,269
April	3,866	4,158	8,024

* The separation between silver of foreign and domestic origin on the basis of refined bars and other refined forms is only approximate.

† Includes purchases of crude silver by the U. S. Mint.

Production of Primary Aluminum in the U. S.

(U. S. Bureau of Mines)

(In short tons)

	1953	1954	1955	1956	1957	1958	1959	1960
Jan.	89,895	116,247	128,203	140,394	147,029	139,910	156,708	164,024
Feb.	92,649	110,483	116,236	132,763	119,059	121,980	142,116	156,826
Mar.	104,460	122,339	130,272	145,895	135,706	134,019	157,189	170,688
Apr.	102,071	120,434	126,394	144,726	139,152	128,559	155,213	168,596
May	105,464	125,138	131,128	150,800	145,174	129,083	163,857	175,863
June	104,152	120,758	127,634	145,726	138,007	115,325	167,323	....
July	109,285	126,161	132,669	151,624	142,157	118,811	179,594	....
Aug.	110,545	125,296	133,551	92,406	143,449	125,416	172,817	....
Sept.	109,333	120,332	130,606	132,316	129,278	124,713	168,205	....
Oct.	108,219	125,089	134,655	149,125	133,759	139,847	173,762	....
Nov.	105,636	121,252	133,689	145,081	135,024	140,962	153,666	....
Dec.	110,291	127,056	140,748	148,391	140,033	153,301	162,996	....
Ttl.	1,252,013	1,460,565	1,565,721	1,679,427	1,647,710	1,655,556	1,953,019	....

Average Silver Prices

(Cents per fine ounce)

	1957	1958	1959	1960
Jan.	91.375	89.449	90.19	91.375
Feb.	91.375	88.625	90.444	91.375
Mar.	91.375	88.625	91.351	91.375
Apr.	91.375	88.625	91.375	91.375
May	91.307	88.625	91.375	91.375
June	90.456	88.625	91.375	...
July	90.31	88.625	91.375	...
Aug.	90.909	88.625	91.399	...
Sept.	90.602	88.673	91.399	...
Oct.	90.625	89.966	91.375	...
Nov.	90.382	90.125	91.375	...
Dec.	89.80	89.932	91.375	...
Aver.	**90.824**	**89.043**	**91.226**	...

Note — The averages are based on the price of refined bullion imported on or after August 31, 1943.

U. S. Lead Imports
(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1960		
	Feb.	Mar.	Apr.
Ore, matte, etc. (cont.)	11,376	17,184	8,490
Canada	3,665	3,301	1,650
Mexico	79	87	34
Honduras	539	226	639
Argentina	...	...	103
Bolivia	...	1,544	542
Chile	...	1,172	...
Colombia	...	12	187
Peru	1,243	4,419	1,823
Union of S. Africa	2,070	4,950	3
Australia	1,966	1,210	3,483
Philippines	9	19	7
Korea	25	...	...
Other countries	1,780	244	19
Base bullion (content)	23	8	...
Peru	20	8	...
Other countries	3	...	...
Pigs and bars	15,511	17,727	19,706
Canada	1,797	3,173	1,541
Mexico	8,912	4,745	3,126
Peru	100	4,867	899
Germany (West)	...	...	315
Spain	903	972	300
United Kingdom	...	...	6
Yugoslavia	2,305	3,970	3,037
Rhodesia & Nyasaland	...	...	224
Australia	1,494	...	10,258
Total Imports:			
Ore, base bullion, ref.	26,910	34,919	28,196
Lead scrap, dross, etc. (content)	495	119	1,230
Antimonial lead & typemetal	1,104	1,516	205
Lead content thereof	1,039	1,441	157

U. S. Copper Imports
(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1960		
	Feb.	Mar.	Apr.
Ore, matte & regulus (content)	9,899	8,256	10,768
Canada	1,484	1,862	655
Mexico	653	159	108
Cuba	938	1,221	1,291
Bolivia	...	454	155
Chile	2,097	625	1,891
Peru	190	170	1,193
Philippines	2,760	2,534	2,368
Union of S. Africa	1,777	1,162	3,080
Australia	...	67	27
Other countries	...	2	...
Blister copper (cont.)	14,215	26,218	22,815
Mexico	2,538	1,145	1,352
Chile	10,081	17,862	14,941
Peru	1,312	3,977	6,522
Union of S. Africa	...	3,213	...
Other countries	284	1	...
Refined cathodes and shapes	22,599	17,962	10,087
Canada	9,864	12,756	9,282
Mexico	441	441	110
Chile	600	650	...
Peru	2,320	1,441	250
Belgium	801	207	225
Germany (West)	4,030	174	...
Spain	2	1,444	...
Sweden	397	454	220
United Kingdom	336	...	...
Rhodesia & Nyasaland	3,724	395	...
Other countries	84	...	...
Total Imports:			
Crude and Refined	46,713	52,436	43,670
Old and scrap (cont.)	628	279	252
Composition metal (content)	4	...	...
Brass scrap & old (cu. cont.)	179	56	90

U. S. Zinc Imports
(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1960		
	Feb.	Mar.	Apr.
Zinc Ore (content)	43,284	44,950	39,168
Canada	11,363	9,386	14,397
Mexico	20,129	14,535	15,058
Cuba	...	77	...
Honduras	795	894	138
Bolivia	...	756	64
Colombia	...	...	15
Peru	4,295	11,874	2,225
Spain	2,951	5,901	3,808
Union of S. Africa	3,513	1,051	2,892
Australia	226	388	537
Philippines	4	31	25
Other countries	8	57	9
Zinc blocks, pigs, etc.	9,477	12,122	7,500
Canada	6,312	5,942	4,092
Mexico	309	2,744	661
Peru	680	698	450
Belgium	413	1,077	663
Germany (West)	110	331	443
Italy	165	43	1,007
Yugoslavia	165	110	...
Belgian Congo	1,323	1,177	184
Total Imports:			
Zinc ore, blocks, pigs	52,761	57,072	46,668
Dross and skimmings	134	188	155
Old and worn out	9	...	38

U. S. Copper Exports
(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1960		
	Feb.	Mar.	Apr.
Ore, concentrates, matte and other unrefined (content)	809	1,108	671
Refined ingots, bars, etc. (a)	19,029	21,239	31,329
Canada	157	137	132
Mexico	44	...	...
Argentina	440	917	457
Brazil	328	540	493
Belgium	88	15	88
Denmark	112	...	112
France	2,594	4,133	5,480
Germany (West)	4,844	6,022	6,423
Italy	3,288	954	5,419
Netherlands	699	392	794
Norway	280	532	7
Sweden	224	391	...
Switzerland	112	173	190
United Kingdom	2,917	4,229	6,378
Yugoslavia	...	...	168
Taiwan	...	...	116
India	...	...	112
Japan	2,621	2,804	4,531
Australia	280	...	336
Other countries	1	...	93
Total Exports:			
Crude and refined	19,838	22,347	32,000
Pipes and tubes	39	75	47
Plates and sheets	15	25	46
Semifabricated forms	156	299	233
Wire, bare	178	388	202
Building wire and cable (b)	80	105	161
Weatherproof wire (b)	4	1	4
Insulated copper wire n.e.s. (b)	854	774	810

(a) Includes exports of refined copper resulting from scrap that was reprocessed on toll for account of the shipper.

(b) Gross weight. n.e.s. — Not elsewhere specified.

Comparative Metal Prices

	Av. 1939	OPA Av. 1946	1959 June 22
Copper, domestic Electro., Del. Val.	11.20	14.375	33.00
Lead (N. Y.)	5.05	8.25	12.00
P. W. Zinc (E. St. Louis, f.o.b.)	5.05	5.05	13.00
New York, del.	...	...	13.50
Tin Spot Straits, N. Y.	...	...	101.75
Aluminum ingot 99½%+	20.00	15.00	28.10
Antimony (R.M.M. brand f.o.b. Laredo)	12.36	14.50	29.00

U. S. Copper Scrap Exports
(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1960		
	Feb.	Mar.	Apr.
Copper scrap, unalloyed† (new and old)	2,932	4,748	5,333
Canada	226	94	125
Argentina	...	22	...
Belgium	2	323	89
Germany (West)	964	1,356	1,965
Italy	222	160	301
Netherlands	...	82	264
Spain	...	621	1,721
Sweden	...	...	168
Yugoslavia	150	1,055	...
United Kingdom	...	...	27
India	233	244	151
Japan	918	791	511
Hong Kong	217	...	...
Other countries	...	...	11
Copper-base scrap, alloyed‡ (new and old)	7,375	8,636	9,511
Canada	4	...	4
Mexico	2	6	1
Belgium	...	...	27
France	11	46	16
Germany (West)	308	416	923
Italy	149	296	932
Netherlands	73	58	350
Switzerland	...	70	86
United Kingdom	...	51	113
India	364	197	28
Japan	6,453	7,496	6,987
Hong Kong	11	...	22
Other countries	...	...	22

† Ash, brass mill, clippings, dross, flue dust, residues, scale, skimmings, wire scrap.

‡ Copper-base alloys, including brass and bronze—Ashes, clippings for remanufacture, cupro-nickel scrap, cupro-nickel trimmings, nickel silver scrap, phosphor bronze, phosphor copper, skimmings, turnings, round.

U. S. Zinc Exports
(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1960		
	Feb.	Mar.	Apr.
Slabs, blocks, etc.	1,816	5,878	4,656
Canada	...	2	207
Mexico	176	187	1
Brazil	...	...	22
Chile	7	...	...
Germany (West)	...	112	...
Netherlands	224	224	224
Sweden	336	168	224
United Kingdom	700	700	3,165
Japan	89	2,556	553
India	153	1,904	196
Other countries	131	25	64
Total Exports:			
Ore, conc., slabs, blocks	1,816	5,878	4,656
Scrap, ashes, dross and skimmings	581	477	437
Battery shells and parts, unassembled	...	23	...
Rolled in sheets, plates and strips and die castings	427	314	342
Zinc and Zinc Alloys in crude and semifabricated forms	128	217	428
Zinc Oxide	172	365	133

U. S. Lead Exports
(A.B.M.S.) (Bureau of the Census)

(In tons of 2,000 lbs.)

	1960		
	Feb.	Mar.	Apr.
Lead, ore, concentrates, matte and base bullion (content)	47	5	5
Mexico	47	5	5
Pigs and bars	6	40	84
Canada	1	...	3
Mexico	3	...	3
Cuba	...	...	3
Guatemala	...	25	...
Venezuela	1	...	...
Philippines	...	8	5
Korea	...	...	67
Other countries	1	7	3
Total Exports:			
Ore, base bullion, ref.	53	45	89
Scrap	...	196	151
Lead plate, including battery plate, not assembled as complete battery units	7	1	8
Babbitt metal	8	4	8
Lead and lead base alloys in semifabricated forms	42	53	63

World Production of Copper

(American Bureau of Metal Statistics)

(In Tons of 2,000 Pounds)

	United States (a)	Canada (b)	Mexico (crude) (c)	Chile (d)	Peru (d)	Fed. Rep. of Germany (e)	Norway (f)	United Kingdom (g-h)	Yugoslavia (e)	India (f-h)	Japan (e)	Turkey (f)	Australia (e)	Northern Rhodesia (e)	Union of South Africa (d)
1955															
Total	1,036,702	326,599	61,583	447,288	35,478	286,805	14,876	138,271	31,151	8,432	124,908	26,313	41,935	350,302	47,176
1956															
Total	1,133,134	356,251	69,918	506,251	35,005	279,461	16,457	127,365	32,390	8,827	139,062	27,101	55,711	435,186	47,914
1957															
Total	1,115,483	360,745	42,905	....	46,141	255,710	17,265	121,799	37,186	9,298	143,654	27,101	55,633	499,418	47,825
1958															
Total	1,881,170	346,816	63,386	462,064	42,750	295,312	19,529	106,134	37,116	9,062	136,612	24,676	72,361	426,513	53,090
1959															
Jan.	95,542	24,669	5,342	44,579	3,115	25,945	1,724	7,356	3,685	679	17,385	2,469	5,349	48,699	4,600
Feb.	88,432	28,016	4,810	43,589	1,627	24,289	1,599	9,211	3,521	557	11,388	1,614	5,930	44,420	4,339
Mar.	101,410	32,427	4,771	44,554	1,601	26,959	1,694	5,554	3,536	850	10,746	2,034	4,573	51,620	4,611
April	98,376	32,130	5,201	42,715	4,250	26,859	1,870	11,259	3,593	763	17,938	2,320	7,419	48,150	4,528
May	104,236	32,622	5,275	46,083	3,770	25,358	1,771	7,693	3,503	764	18,516	2,480	6,408	53,067	4,676
June	99,419	36,979	5,847	46,901	3,357	24,635	1,743	10,909	3,231	746	18,621	2,362	8,133	53,895	4,766
July	81,662	36,067	5,755	45,508	3,676	25,890	1,639	7,108	3,369	781	18,957	1,846	5,346	48,806	4,541
Aug.	51,327	35,045	5,326	50,093	2,533	24,716	1,677	6,610	1,810	774	18,805	2,378	5,798	50,285	4,357
Sept.	19,503	35,740	4,125	44,439	8,782	25,357	1,986	10,438	3,619	799	18,837	2,427	7,111	48,753	3,742
Oct.	20,931	35,980	4,068	36,449	3,061	27,840	1,800	8,951	3,137	804	18,898	2,304	....	49,519	3,025
Nov.	18,351	35,271	4,886	50,877	2,904	25,258	1,495	10,076	3,451	802	17,186	2,923	....	49,232	5,005
Dec.	26,686	34,416	4,872	53,186	3,438	28,143	2,035	8,736	2,403	421	20,498	....	....	48,350	5,244
1960															
Jan.	64,098	36,404	4,326	47,550	2,901	27,222	1,941	7,489	3,310	769	21,096	....	4,702	56,495	5,061
Feb.	85,899	35,824	4,817	43,380	3,579	25,288	1,954	8,719	3,013	831	....	....	6,915	47,322	3,017
Mar.	107,895	38,341	5,376	49,124	3,754	30,836	....	8,453	3,617	913	....	....	....	52,332	.....
Apr.	104,895	....	4,672	....	4,143	....	....	....	....	....	....	....	....	54,595	.....
May	105,398	....	....	....	3,211	....	....	....	....	....	....	....	....	....	.....

(a) Reported by Copper Institute. Crude, "recoverable contents of mine production or smelter production or shipments, and custom intake." Does not include intake of scrap nor of imported ore except that received from Cuba and Philippines. (b) Blister copper plus recoverable copper in concentrates, matte, etc., exported. (c) Crude copper, i. e., copper content of blister or converter copper as originally produced in the several countries, although some of it may be refined at home; e. g., in Rhodesia. (d) Blister and/or refined. (e) Refined. There are quantities of scrap included in the electrolytic production in addition to that reported, tonnage of which is not obtainable. (f) Smelter production. (g) Refinery production from imported blister only. (h) British Bureau of Non-Ferrous Metal Statistics. * Refined.

World Production of Refined Lead

(American Bureau of Metal Statistics)

(In Tons of 2,000 Pounds)

	United States	Canada	Mexico	Peru	Belgium	France	Fed. Rep. of Germany	Italy	Spain	Yugoslavia	Japan	Australia (a)	French Morocco	Tunisia	Rhodesia	Total
1955																
Total	547,153	148,811	221,133	67,303	91,241	73,251	162,508	46,806	67,509	83,347	40,912	254,558	28,870	28,620	17,976	1,893,125
1956																
Total	613,293	147,865	213,524	61,917	111,479	73,251	178,713	42,780	64,824	83,507	51,019	256,300	30,993	26,623	17,024	1,984,344
1957																
Total	604,533	142,935	218,266	55,971	....	94,509	195,136	42,336	61,332	85,313	59,670	261,035	34,442	27,069	12,364	2,041,530
1958																
Total	575,612	130,886	246,443	80,999	119,192	111,337	223,973	60,860	77,490	92,903	52,915	271,654	42,266	32,359	16,492	1,955,753
1959																
Jan.	43,662	14,073	19,031	4,951	10,761	6,694	18,658	4,636	6,215	4,082	6,086	24,470	2,575	1,068	1,344	169,256
Feb.	39,498	12,740	15,472	2,662	9,460	5,812	17,869	4,437	6,020	8,596	6,474	22,037	2,319	1,765	1,344	157,928
Mar.	39,238	13,704	16,305	3,424	8,447	6,733	17,553	3,168	6,196	8,153	6,889	20,144	1,905	2,429	1,344	156,914
April	40,606	13,655	16,621	4,438	8,038	5,541	17,141	4,942	6,491	6,876	6,615	23,919	2,726	2,155	1,344	162,611
May	39,101	13,357	16,934	6,606	8,797	7,363	17,728	3,[illegible]	7,435	8,369	6,137	23,499	2,050	1,784	1,344	165,602
June	37,459	12,997	20,000	6,540	9,125	6,976	18,128	2,453	6,510	7,854	6,349	25,151	1,552	926	1,344	164,815
July	32,882	8,096	17,099	6,401	8,734	6,065	16,381	4,384	6,074	2 221	5 303	19,125	2,859	1,749	1,344	139,291
Aug.	25,589	7,357	19,086	4,267	7 547	6,581	15,256	3,354	6,049	8,645	5,344	21,168	862	2,863	1,344	136,725
Sept.	14,801	9,775	14,320	4,354	7,217	6,164	17,773	4,502	4,728	8,731	5,322	22,786	3,567	2,352	1,344	128,850
Oct.	18,892	9,897	17,988	6,093	7,107	6,004	18,070	4,310	6,193	....	4,663	24,226	3,466	2,669	1,344	.....
Nov.	18,796	9,674	18,223	6,199	7,766	6,431	17,820	4,310	6,193	8,273	4,594	24,226	3,466	2,669	1,344	141,370
Dec.	30,160	10,071	16,448	5,826	7,708	6,581	19,726	4,638	6,639	11,393	6,865	23,448	3,869	2,056	1,344	.....
1960																
Jan.	40,043	11,664	15,821	6,127	8,450	6,818	19,424	3,128	7,284	6,896	6,699	26,233	2,448	....	1,309	163,457
Feb.	36,435	12,459	17,371	6,065	8,746	6,276	17,907	4,260	6,468	7,167	....	24,964	2,267	1,047	1,316	.....
Mar.	37,192	....	13,687	7,154	9,561	8,500	19,743	3,716	6,249	7,804	....	19,307	2,916	1,774	1,348	.....
Apr.	40,177	....	17,715	6,945	....	9,370	....	3,607	....	....	....	....	3,053	2,330	1,347	.....
May	....	....	....	6,905	....	....	....	....	....	....	....	....	....	....	1,354	.....

(a) Production credited to Australia includes lead refined in England from Australian base bullion.

World Production of Slab Zinc

(American Bureau of Metal Statistics)

(In Tons of 2,000 Pounds)

	United States (a)	Can. (b)	Mexico	Peru (b-c)	Belgium	France (a)	Fed. Rep. of Germany	Great Britain	Italy	Netherlands	Norway (b)	Spain	Yugoslavia	Japan (a)	Australia (b)	Rhodesia (b)	Total (d)
1955																	
Total	1,031,018	257,008	61,879	18,943	233,623	123,623	197,024	90,917	77,761	31,202	49,724	26,244	15,175	122,965	113,221	31,248	2,534,457
1956																	
Total	1,062,954	255,601	62,136	10,428	251,906	124,105	204,961	90,784	80,407	32,123	53,170	25,224	15,434	153,821	117,445	32,396	2,630,383
1957																	
Total	1,574,500	247,356	62,354	35,772	259,701	148,455	202,627	85,348	81,179	32,786	52,787	24,279	30,256	152,145	123,587	33,040	2,691,699
1958																	
Dec.	75,503	21,705	5,537	2,686	19,402	13,844	17,090	7,564	6,344	2,332	4,755	2,262	2,684	12,473	10,860	2,856	213,093
Total	892,607	254,661	18,354	34,685	257,540	177,422	210,408	80,494	5,955	2,841	54,423	26,750	34,446	166,883	128,548	39,508	2,464,639
1959																	
Jan.	76,481	21,456	5,476	2,753	19,857	13,903	17,164	5,955	5,617	2,693	4,826	2,028	2 647	11,679	10 541	2 800	211,506
Feb.	71,174	19,709	4,915	1,497	19,838	13,491	15,632	6,123	4,735	2,927	4,928	1,926	2,510	14,105	9,617	2,548	199,495
Mar.	79,918	22,135	5,439	2,363	20,215	14,230	17,325	7,797	6 805	2 991	4 917	2 369	3,014	13,217	10,759	2,800	221 316
Apr.	76,393	21,512	5,225	2,502	20,408	14,087	16,426	6,030	7,039	2,816	3,621	2,239	2,509	15,645	10,472	2,716	216,378
May	77,489	21 147	5,108	2,545	21,181	13,902	16,633	6,595	7,790	2,823	4,798	2,273	2,701	16,171	11,187	2,744	226,057
June	75,544	21 950	4,776	2,524	21,004	14,120	16,185	8,271	7,164	2,899	4,759	2,180	2,083	15,873	10,899	2,716	218,131
July	73,101	21,055	5,038	2,634	20,100	14,262	16,325	6,112	7,303	2,917	4,539	2,057	3,796	15,233	11,189	2,856	215,525
Aug.	69,768	21 588	4,965	2,504	19,472	14,138	16,585	6,507	7,370	2,968	4,646	2,198	3,355	16,308	11,298	2,912	211,964
Sept.	62,209	20 744	4,935	2,537	19,387	11,883	16,366	7,892	6,819	2,928	4,708	2,208	3,013	15,133	10,985	2,800	199,560
Oct.	63,938	21,744	5,084	2,545	20,512	13,228	17,064	5,657	6,403	2,967	3,570	2,245	....	....	10,904	2,800	.....
Nov.	62,346	21,039	5,072	2,608	21,180	12,251	16,689	6,203	6 403	2 967	3.570	2,245	4,990	13,634	10,904	2,800	199,319
Dec.	69,666	21,963	5,330	2,578	21,810	12,807	17,336	7,772	6,519	3,201	3,074	2,331	....	15,141	11,305	2,906	.....
1960																	
Jan.	73,326	22,426	5,278	2,608	21,957	12,675	17,409	7,250	6,781	2,786	4,743	2,402	3,178	15,498	11,023	2,707	220,587
Feb.	74,738	21,055	4,627	2,660	22,059	13,331	16,501	5,761	6,774	2,957	4,299	2,213	3,180	....	10,357	2,664	.....
Mar.	86,028	22,549	5,297	2,841	22,406	14,424	17,663	7,868	7,794	....	4,388	2,242	3,392	....	11,137	2,894	.....
Apr.	83,221	21,391	4,662	2,760	....	14,235	....	6,860	7,173	....	4,421	2,146	....	....	....	2,800	.....
May	79,216	....	....	3,051	....	....	....	....	....	....	3,638	....	....	....	....	2,897	.....

(a) Partially electrolytic. (b) Entirely electrolytic. (c) Beginning 1954 both electrolytic and electrochemic. (d) The above totals omit production in Russia Czechoslovakia, Poland and in Argentina.

U. K. Stocks of Zinc

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

At start of:	Virgin Zinc 1959	Virgin Zinc 1960	Zinc Conc. 1959	Zinc Conc. 1960
Jan.	34,166	37,162	56,371	45,885
Feb.	34,805	48,337	58,518	41,547
Mar.	36,850	48,689	57,897	39,546
Apr.	38,457	51,064	52,151	44,250
May	38,643	54,491	47,936	47,486
June	37,713	....	41,954	....
July	38,297	....	45,640	....
Aug.	37,427	....	43,948	....
Sept.	40,358	....	42,385	....
Oct.	40,995	....	39,233	....
Nov.	35,994	....	38,948	....
Dec.	35,460	....	47,131	....

U. K. Zinc Imports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

(Gross Weight)	1960 Feb.	1960 Mar.	1960 Apr.
Zinc ore and concentrates	14,230	26,848	20,356
Zinc conc.*	4,206	12,881	†
Australia	1,364	10,666	...
Peru	1,189	595	...
Burma	935	970	...
Turkey	616	...	...
Other countries	102	650	...
Zinc and zinc alloys	17,616	19,802	15,094
Rhodesia-Nyasaland	350	375	..
Australia	1,121	...	700
Canada	7,398	11,462	6,642
Belgium	1,031	975	1,510
Germany (W.)	1	70	11
Netherlands	327	25	94
Soviet Union	2,206	3,071	1,804
United States	1,600	639	949
Belgian Congo	1,465	1,550	1,325
Poland	150	750	175
Other countries	1,877	885	1,884

* British Bureau of Non-Ferrous Metal Statistics. The estimated zinc content is not the content of the gross weight as officially reported for any comparable period.
† Not available.

U. K. Copper Exports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	1960 Feb.	1960 Mar.	1960 Apr.
Copper unwrought — ingots blocks, slabs, bars, etc.	4,241	3,726	3,422
Plates, sheets, rods, etc.	6,230	4,931	1,731
Wire (including uninsulated electric wire)	229	316	264
Tubes	773	1,139	958
Other copper worked including pipe fittings)	154	95	166
Total	11,627	10,207	6,541

Copper Consumption in United Kingdom

British Bureau of Non-Ferrous Metal Statistics

(In tons of 2,240 pounds)

	Unalloyed	Alloyed*	Total	Virgin	Scrap
1956 Total	388,167	251,312	639,479	500,794	138,685
1957 Total	407,326	234,158	641,484	507,493	133,991
1958 Total	442,977	225,007	667,978	534,619	133,359
1959					
February	29,373	19,020	48,293	35,775	12,518
March	27,864	19,567	47,431	36,124	11,307
April	32,742	22,782	55,525	43,015	12,509
May	28,421	19,193	47,620	33 367	14 253
June	35,009	21,103	56,112	44,761	11,351
July	24,714	19.858	44,572	32,034	12,538
August	24,524	16,097	40,621	30,866	9,735
September	35,447	21,920	57,367	45,178	12,189
October	37,221	23,880	61,101	47,345	13,756
November	37,463	23,392	60.855	47,031	13,824
December	36,044	23,202	59,246	44,753	14,493
Total	382,295	250,871	633,166	478,819	154,347
1960					
January	33,888	23,428	57,316	41,741	15,575
February	37,662	23,925	61,587	48,824	12,763
March	41,306	26,676	67,982	54,389	13,593
April	35,153	23,525	58,678	41,147	17,531

* Includes copper sulphate effective October, 1954.

U. K. Virgin Copper Stocks

(In long tons)

(British Bureau of Non-Ferrous Metal Statistics)

At start of.	1958	1959	1960
Jan.	91,477	64,184	55,005
Feb.	82,483	65,941	61,008
Mar.	89,147	65,875	55,979
Apr.	94,330	72,946	51,137
May	88,582	72,318	59,404
June	88,913	78,505	....
July	81,851	80,477	....
Aug.	84,756	81,986	....
Sept.	89,899	89,483	....
Oct.	85,092	77,803	....
Nov.	74,696	64,602	....
Dec.	69,023	60,936	....

U. K. Refined Lead Stocks

(British Bureau of Non-Ferrous Metal Statistics)

(In long tons)

At start of.	1958	1959	1960
Jan.	51,296	45,444	48,035
Feb.	49,134	48,102	44,290
Mar.	47,738	40,535	42,043
Apr.	40,547	53,289	41,248
May	37,509	62,286	50,363
June	34,608	63,135	....
July	40,518	57,810	....
Aug.	37,148	67,586	....
Sept.	43,758	66,048	....
Oct.	48,856	63,121	....
Nov.	40,216	56,697	....
Dec.	35,335	46,984	....

Zinc Imports and Exports By Principal Countries

(A.B.M.S.)

Reported in pigs, bars, etc.; metric tons except where otherwise noted.

	1960 Jan.	1960 Feb.	1960 Mar.
IMPORTS			
U. S. (s.t.)	8,955	9,477	12,122
Canada (s.t.)	13	...	...
Belgium	16	...	...
Denmark	802	1,124	934
France	714	1,373	2,116
Germany, W.*	9,890	...	...
Italy	620	...	...
Netherlands	991	1,239	731
Sweden	4,241	2,621	1,529
Switzerland*	738	1,834	1,982
U. K. (l.t.)	24,715	17,616	19,802
India† (l.t.)	2,119	3,433	...
EXPORTS			
U. S. (s.t.)	5,608	1,816	5,878
Canada (s.t.)	14,874	18,106	16,887
Belgium	12,055	...	...
Denmark	36	264	25
France	519	564	521
Germany, W.*	1,312	...	...
Italy	8,545	...	...
Netherlands	1,204	1,395	1,693
Norway	3,480	2,843	...
Switzerland*	...	18	...
U. K.‡ (l.t.)	549	763	720
Northern Rhodesia† (l.t.)	2,510	2,540	2,379
Australia (l.t.)	2,252	2,833	2,036
Belgian Congo	6,668	...	...

* Includes scrap.
‡ Includes manufactures.
† British Bureau of Non-Ferrous Metal Statistics.

United Kingdom Tin Statistics

(British Bureau of Non-Ferrous Metal Statistics)

	Tin Content of Tin in Ore: Imports	Production*	Stock at end of period*	Tin Metal: Imports	Production*	Consumption	Exports & Re-exports	Stock at end of period
1957 Total	39,272	1,028	....	9,834	34,175	20,365	7,762	71,931
1958 Total	27,419	1,090	....	13,195	32,551	20,413	20,398	19,054
1959								
May	1,493	92	1,575	28	1,808	1,686	2,421	9,445
June	1,323	129	920	25	2,267	1,987	2,919	9,638
July	2,971	112	2,043	47	2,735	1,682	2,639	11,255
August	1,970	58	1,704	21	1,908	1,224	2,956	10,752
September	2,990	115	2 132	33	2,229	2,093	3,742	10,624
October	2,259	108	1,851	24	3 101	1,915	1,986	10,383
November	3,936	90	3,317	25	2,513	1,861	1,997	10,545
December	2 161	117	2,941	15	2,858	1,997	1 513	11,523
Total	25,812	1,252	....	726	27,229	21,396	21,858	10,884
1960								
January	1,490	117	1,845	190	2,377	1,878	1,394	10,884
February	2,417	....	2,095	421	2,144	1,879	1,189	10,240
March	2,294	....	2,316	10	2,743	2,191	1,099	10,677

*As reported by International Tin Study Group. Production of Tin Metal includes production from imported scrap and residues refined on toll. Stocks exclude strategic stock but include official warehouse stocks.

Canada's Copper Output

(Dominion Bureau of Statistics)

(Primary Copper)

(In Tons)

	1957	1958	1959	1960
Jan.	25,469	32,868	24,664	36,404
Feb.	21,861	28,668	28,016	35,824
Mar.	27,663	29,239	32,427	38,341
Apr.	27,398	30,635	32,130	...
May	29,086	32,471	32,622	...
June	24,093	32,418	36,979	...
July	27,195	31,131	36,067	...
Aug.	26,943	30,867	35,045	...
Sept.	24,633	27,546	35,740	...
Oct.	30,312	22,572	35,980	...
Nov.	27,331	20,368	35,271	...
Dec.	31,604	19,033	34,416	...
Year	323,588	346,816	399,362	

Canada's Copper Exports

(Dominion Bureau of Statistics)

(Ingots, bars, slabs and billets)

(In Tons)

	1957	1958	1959	1960
Jan.	20,582	26,883	10,620	29,046
Feb.	16,272	16,816	10,304	22,295
Mar.	14,270	18,662	11,025	20,338
Apr.	16,417	23,261	17,079	....
May	19,048	19,358	21,739	....
June	10,826	20,831	21,310	....
July	18,621	21,703	13,650	....
Aug.	21,980	15,881	15,155	....
Sept.	14,314	15,373	21,077	....
Oct.	13,110	20,341	19,977	....
Nov.	16,622	14,391	23,172	....
Dec.	16,282	11,138	20,542	....
Year	198,794	224,638	198,010	....

Canada's Lead Output

(Dominion Bureau of Statistics)

(Recoverable Lead)*

(In Tons)

	1957	1958	1959	1960
Jan.	14,032	17,117	17,118	16,284
Feb.	15,170	14,908	15,923	16,397
Mar.	16,940	15,421	17,389	16,887
Apr.	14,275	15,644	16,237	....
May	14,591	15,131	16,813	....
June	16,431	15,645	14,968	....
July	14,377	14,076	15,111	....
Aug.	14,679	12,260	14,104	....
Sept.	15,869	15,401	12,420	....
Oct.	14,151	14,564	13,958	....
Nov.	15,879	16,680	13,024	....
Dec.	15,296	18,248	14,545	....
Year	171,690	185,095	181,610	....

* New base bullion from Canadian ores plus recoverable lead in ores or concentrates shipped for export.

Canada's Lead Exports

(Dominion Bureau of Statistics)

(In Pigs)

(In Tons)

	1957	1958	1959	1960
Jan.	8,946	4,752	5,034	5,549
Feb.	6,633	1,553	6,377	6,692
Mar.	7,044	9,497	11,831	11,216
Apr.	7,314	7,450	7,836	....
May	9,676	7,764	12,230	....
June	7,210	4,036	15,610	....
July	4,682	12,629	3,478	....
Aug.	6,416	7,232	4,023	....
Sept.	8,467	5,125	3,895	....
Oct.	7,761	10,320	4,885	....
Nov.	6,175	10,641	6,785	....
Dec.	4,217	11,352	10,218	....
Year	84,541	92,351	92,252	....

Canada's Zinc Output

(Dominion Bureau of Statistics)

(Refined Zinc)

(In Tons)

	1957	1958	1959	1960
Jan.	20,340	21,801	21,456	22,247
Meb.	19,808	19,743	19,709	21,055
Mar.	21,941	22,314	22,135	22,549
Apr.	20,504	20,989	21,512	....
May	20,564	21,269	21,147	....
June	19,928	20,353	21,250	....
July	20,061	20,873	21,055	....
Aug.	20,305	21,152	21,588	....
Sept.	20,247	20,530	20,744	....
Oct.	20,892	21,125	21,744	....
Nov.	20,933	20,273	21,039	....
Dec.	21,823	21,705	21,963	....
Year	247,351	252,157	255,342	....

Canada's Zinc Exports

(Dominion Bureau of Statistics)

(Ore in Tons)

	1957	1958	1959	1960
Jan.	19,304	17,349	13,565	18,445
Feb.	16,618	8,376	12,675	12,995
Mar.	14,923	19,636	14,617	14,108
Apr.	17,131	16,346	12,789	....
May	16,680	15,121	11,049	....
June	16,157	7,776	20,298	....
July	12,912	27,394	23,122	....
Aug.	20,520	15,906	18,464	....
Sept.	17,671	8,670	14,367	....
Oct.	16,735	22,810	12,518	....
Nov.	17,225	17,978	16,577	....
Dec.	16,131	18,344	11,043	....
Year	202,007	195,707	181,084	....

Canada's Silver Exports

(Dominion Bureau of Statistics)

(In ores and concentrates)

Fine Ounces)

	1958	1959	1960
Jan.	634,715	185,367	887,242
Feb.	208,149	329,742	1,312,006
Mar.	350,827	425,973	740,465
Apr.	284,971	989,593	.....
May	376,082	564,017	.....
June	438,253	871,570	.....
July	529,770	728,598	.....
Aug.	279,511	688,042	.....
Sept.	583,570	763,017	.....
Oct.	323,475	767,939	.....
Nov.	217,892	70,205	.....
Dec.	871,573	430,802	.....
Year	5,098,788	6,210,175	.....

Canada's Silver Output

(Dominion Bureau of Statistics)

(In Ounces)

	1958	1959	1960
Jan.	2,529,583	3,094,440	2,755,069
Feb.	2,294,655	2,264,903	2,864,074
Mar.	2,448,698	2,782,307	2,734,245
Apr.	2,558,958	2,691,503	.....
May	2,650,665	2,499,149	.....
June	2,527,632	2,676,937	.....
July	2,385,687	2,867,957	.....
Aug.	2,884,154	2,519,033	.....
Sept.	2,856,304	2,446,846	.....
Oct.	2,390,027	3,072,219	.....
Nov.	2,643,790	2,333,137	.....
Dec.	2,917,528	2,678,623	.....
Year	31,087,681	31,927,054	.....

Canada's Nickel Output

(Dominion Bureau of Statistics)

(In Tons)

	1957	1958	1959	1960
Jan.	16,609	16,710	8,047	17,399
Feb.	15,027	15,896	12,616	16,435
Mar.	16,733	15,853	14,922	17,780
Apr.	15,347	15,163	15,493	...
May	16,225	15,231	16,622	...
June	15,447	14,603	16,599	...
July	15,878	12,851	16,199	...
Aug.	16,756	12,597	16,784	...
Sept.	15,604	11,786	16,205	...
Oct.	15,628	3,682	17,212	...
Nov.	14,587	3,178	16,904	...
Dec.	15,096	3,298	18,738	...
Year	188,962	140,842	186,341	

Canadian Copper Exports

(Dominion Bureau of Statistics)

(In tons of 2,000 lbs.)

	1960		
	Feb.	Mar.	Apr.
Ore, matte, regulus, etc. (content)	3,944	4,248	2,432
United States	1,901	2,472	360
Germany (W.)	140	...	...
Norway	1,461	1,567	1,383
U. Kingdom	51	209	138
Japan	391	...	551
Ingots, bars, billets, anodes	22,295	20,339	21,135
United States	11,038	11,502	9,531
Brazil	...	...	2
Belgium	...	...	280
France	1,120	1,120	840
Germany (W.)	452	616	672
Greece	...	...	112
Netherlands	...	112	112
Sweden	...	224	112
U. Kingdom	9,319	6,387	8,724
India	365	375	397
Finland	...	...	336
Other countries	1	3	17
Total Exports:			
Crude & refined	26,239	24,587	23,567
Old and scrap	736	396	249
Rods, strips, sheet & tubing	1,549	1,275	1,111

Canadian Zinc Exports

(Dominion Bureau of Statistics)

(In tons of 2,000 lbs.)

	1960		
	Feb.	Mar.	Apr.
Ore (zinc content)	12,955	14,108	13,400
United States	12,955	14,108	12,725
Belgium	...	...	59
U. Kingdom	...	...	616
Slab zinc	18,106	16,887	10,281
United States	6,661	6,390	3,441
Brazil	...	...	190
Chile	110	...	...
Germany (W.)	...	..	112
Netherlands	...	448	336
U. Kingdom	10,721	7,007	5,610
Korea	250	199	108
Hong Kong	...	...	56
Taiwan	...	154	...
India	364	154	318
Japan	...	2,535	...
Thailand	...	...	110
Total Exports:			
Ore and slabs	31,061	30,995	23,681
Zinc scrap, dross, ashes	221	129	58
United States	182	112	27
Netherlands	...	17	...
Japan	39	...	31

French Copper Imports

(A. B. M. S.)

(In metric tons)

	1960		
	Feb.	Mar.	Apr.
Crude copper for refining (blister, black and cement)	813	...	813
Belgian Congo	813	...	813
Refined	16,271	18,144	16,126
United States	2,036	3,397	5,157
Canada	2,032	1,015	1,270
Chile	375	1,750	250
Belgium	5,781	7,150	3,845
Germany (W.)	53	464	651
Norway	76	76	...
Sweden	58	5	20
Belgian Congo	2,595	1,942	2,616
Rhodesia-Nyasaland	3,265	2,244	2,299
Other countries	...	101	18

Canadian Lead Exports

(Dominion Bureau of Statistics)

(In tons of 2,000 lbs.)

	1960		
	Feb.	Mar.	Apr.
Ore (lead content)	5,686	3,387	2,468
United States	3,193	3,387	1,791
Belgium	...	...	677
Germany (W.)	2,493	...	...
Refined lead	6,692	11,216	5,407
United States	2,598	3,920	1,630
U. Kingdom	3,892	6,564	3,426
Japan	55	496	261
Taiwan	143	88	...
Korea	...	11	...
India	...	104	90
Other countries	4	33	...
Total Exports:			
Ore and refined	12,378	14,603	7,875
Lead scrap	426	4	375

Copper Imports and Exports By Principal Countries

(A.B.M.S.)

Reported in ingots, slabs, etc.; metric tons except where otherwise noted.

	1960		
	Jan.	Feb.	Mar.
IMPORTS			
U. S. (blist., s.t.)	21,507	14,215	26,218
(ore, etc., s.t.)	7,246	9,899	8,256
(ref., s.t.)	34,120	22,599	17,962
Belgium*	17,304		
Denmark	451	517	431
France (crude)		813	
(refined)	12,276	16,271	18,144
Italy	15,097		
Germany, West	22,982		
Netherlands	2,717	2,132	2,243
Norway	74	428	
Sweden	9,848	7,558	7,343
Switzerland	1,544	2,444	2,056
U. K. (l.t.)	44,384	40,076	43,927
India (blister/-ref., l.t.)†	3,375	2,825	
EXPORTS			
U. S. (ore, and unref., s.t.)	53	809	1,108
(ref., s.t.)	11,337	19,029	21,239
Canada (ref., s.t.)	29,046	22,295	20,339
Belgium*	14,804		
Finland‡	369		
Germany, West	8,815		
Norway	1,495		
Sweden	908	2,332	1,820
U. K. (l.t.)	6,067	4,241	3,726
Belgian Congo††	21,094		
No. Rhodesia (blister & ref., l.t.)†	59,719	37,709	53,118

† British Bureau of Non-Ferrous Metal Statistics.

†† Copper wire bars and ingot bars 99% and copper ingots 97%.

‡ Includes old.

* Includes alloys.

Canada's Nickel Exports

(Dominion Bureau of Statistics)

(Refined, in oxidse, matte, etc.)

(In Tons)

	1957	1958	1959	1960
Jan.	14,260	14,233	6,757	21,443
Feb.	9,974	12,157	7,976	14,680
Mar.	14,958	12,316	14,006	19,072
Apr.	18,671	20,962	14,213	.....
May	19,351	20,574	16,142	.....
June	14,539	16,144	15,901	.....
July	14,181	14,055	11,985	.....
Aug.	14,966	13,012	13,664	.....
Sept.	14,160	14,371	19,143	.....
Oct.	13,370	8,335	.....	.....
Nov.	16,620	3,001	.....	.....
Dec.	14,606	5,060	.....	.....
Year	178,656	154,220	.....	.....

French Zinc Imports

(A. B. M. S.)

(In metric tons)

	1960		
	Feb.	Mar.	Apr.
Ore (gross weight)	37,279	72,085	27,663
Mexico	...	357	...
Peru	685	1,129	...
Belgium	1,287	1,310	567
Greece	821	6,091	3,657
Italy	5,827	9,442	6,020
Norway	923	1,551	2,114
Spain	11,349	17,981	5,474
Yugoslavia	...	1,331	3,100
Algeria	10,543	13,543	1,500
Morocco	1,144	12,285	4,529
Tunisia	4,700	4,700	...
Burma	...	162	...
Bulgaria	...	2,203	702
Slabs, bars, blocks, etc.	1,373	2,116	2,744
Belgium	1,322	1,562	1,819
Germany (W.)	...	44	...
Italy	51	...	102
Netherlands	...	500	308
Norway	...	...	515
Algeria	...	10	...

French Metal Exports

(A. B. M. S.)

(In metric tons)

	1960		
	Feb.	Mar.	Apr.
LEAD			
Ore (gross weight)	3,333	1,785	1,944
Pig lead	767	781	44
Sweden	...	13	...
Switzerland	760	760	...
Other countries	7	8	44
Antimonial lead	140	93	97
COPPER			
Crude copper for refining (blister, black and cement)	1,280	715	653
ZINC			
Slabs, bars, blocks, etc.	564	521	548

U. K. Copper Imports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	1960		
	Feb.	Mar.	Apr.
(Gross Weight)			
Copper and copper alloys	40,076	43,927	43,110
U. of S. Africa	175	50	50
Rhodesia-Nyasaland	16,081	21,881	15,222
Canada	9,264	7,051	11,158
Belgium	181	104	102
Germany (W.)	33	436	42
Norway	51	200	200
United States	988	4,777	4,298
Chile	12,854	8,865	11,249
Peru	175	...	100
Belgian Congo	...	250	500
Other countries	274	313	189
Of which:			
Electrolytic	25,953	31,491	29,931
Other refined	6,024	4,600	3,625
Blister or wrought	7,775	7,397	9,015
Wrought and alloys	324	439	539
Total	40,076	43,927	43,110

Nonferrous Castings

MONTHLY SHIPMENTS, BY TYPE OF METAL
(Bureau of Census — Thousands of Pounds)

	Aluminum	Copper	Magnesium	Zinc	Lead Die
1954 Total	607,764	834,557	25,572	474,741	18,396
1955 Total	833,058	1,011,748	27,892	781,254	21,045
1956 Total	801,136	966,473	36,168	88,069	20,734
1957 Total	751,856	875,389	30,322	663,330	23,791
1958					
December	59,487	67,905	2,612	55,600	1,497
Total	596,816	739,915	27,228	508,297	18,920
1959					
January	62,927	66,874	2,151	53,347	1,571
February	62,486	69,589	2,162	48,779	1,285
March	73,351	78,641	2,129	57,600	1,765
April	72,976	82,799	2,455	57,325	1,862
May	68,268	78,413	2,370	60,656	2,025
June	66,471	79,730	2,484	56,128	2,007
July	56,911	67,073	2,265	46,756	1,858
August	55,904	68,979	2,243	46,566	1,898
September	66,193	76,045	2,263	58,144	2,218
October	67,499	79,832	2,436	59,214	2,068
November	54,557	70,674	2,023	46,270	1,755
December	64,939	73,558	2,163	60,652	1,346
Total	790,520	892,027	27,144	651,437	21,658
1960					
January	68,247	73,971	2,135	61,357	1,496
February	71,699	71,797	2,075	62,925	1,628
March	72,216	75,908	1,903	60,816	1,994

Copper Castings Shipments

BY TYPE OF CASTING
(Bureau of Census) (Thousands of Pounds)

	Total	Sand	Permanent Mold	Die	All Other
1952 Total	1,009,910	910,862	63,865	8,259	26,924
1953 Total	990,496	888,369	61,316	10,077	30,734
1954 Total	834,557	751,804	48,849	6 480	27,394
1955 Total	1,011,748	907,852	63,041	8,541	31,408
1956 Total	966,113	866,404	57,522	10,023	32,134
1957 Total	875,389	789,819	44,746	10,776	30,048
1958					
September	64,447	58,435	2,888	876	2,248
October	74,012	67,564	3,239	790	2,419
November	62,746	57,386	2,604	810	1,946
December	67,905	61,119	3,535	1,059	2,192
Total	739,985	667,255	36,529	10,201	22,681
1959					
January	66,874	59,856	3,572	1,216	2,230
February	66,589	62,593	3,557	1,176	2,263
March	78,641	69,472	4,333	1,361	3,475
April	82,799	73,567	4,640	1,328	3,264
May	78,413	69,351	4,363	1,291	3,408
June	79,730	70,836	4,421	1,175	3,298
July	69,073	61,650	3,869	946	2,608
August	68,979	60,346	4,410	993	3,230
September	76,045	66,517	4,810	1,138	3,580
October	79,832	69,583	5,172	1,169	3,908
November	70,674	61,490	4,893	1,160	3,131
December	73,558	64,579	4,337	1,130	3,512
Total	891,216	790,290	52,377	14,083	36,907
1960					
January	73,971	65,742	3,915	1,371	2,943
February	71,797	63,105	4,146	1,282	3,266
March	75,908	66,517	4,346	1,381	3,664

Nickel Averages

Electro, cathode sheets, 99.00%, f.o.b. refinery, duty included
(Cents Per Pound)

	1957	1958	1959	1960
Jan.	74.00	74.00	74.00	74.00
Feb.	74.00	74.00	74.00	74.00
Mar.	74.00	74.00	74.00	74.00
Apr.	74.00	74.00	74.00	74.00
May	74.00	74.00	74.00	...
June	74.00	74.00	74.00	..
July	74.00	74.00	74.00	...
Aug.	74.00	74.00	74.00	...
Sept.	74.00	74.00	74.00	...
Oct.	74.00	74.00	74.00	...
Nov.	74.00	74.00	74.00	...
Dec.	74.00	74.00	74.00	...
Aver.	74.00	74.00	74.00	...

Platinum Averages

N. Y. MONTHLY QUOTATIONS
(Dollars per Troy Ounce)

	1957	1958	1959	1960
Jan.	101.92	77.85	52 57	80.00
Feb.	98.59	74.82	59.25	83.29
Mar.	93.50	72.096	77.10	83.00
Apr.	93.45	70.72	77.18	83.00
May	92.865	67.34	77.50	83.00
June	92.02	66.18	77.50	...
July	90.265	64.35	78.00	...
Aug.	84.426	60.94	78.00	...
Sept.	84.00	59.50	78.00	...
Oct.	84.00	57.327	78.00	...
Nov.	83.80	56.41	78.44	...
Dec.	78.70	53.154	78.50	...
Aver.	89.79	65.07	74.17	..

Spot Straits Tin

(Straits, Open Market, N. Y.)
Monthly Average Prices

	1957	1958	1959	1960
Jan.	101.511	92.94	99.411	99.863
Feb.	101.132	93.915	102.785	101.178
Mar.	99.643	94.452	103.042	100.228
Apr.	99.304	93.988	102.505	99.25
May	93.347	94.512	103.125	99.554
June	98.05	94.708	104.25	...
July	96.52	94.898	102.337	...
Aug.	94.261	94.988	102.333	...
Sept.	93.406	94.101	102.44	...
Oct.	91.838	96.523	102.238	...
Nov.	89.236	99.118	101.021	...
Dec.	92.35	98.989	99.176	...
Aver.	96.301	95.177	102.055	..

Prompt Tin Prices

(Straits, Open Market, N. Y.)
Monthly Average Prices
(Cents Per Pound)

	1957	1958	1959	1960
Jan.	101.347	92.652	99.351	99.863
Feb.	100.257	93.763	102.708	100.987
Mar.	99.476	94.363	103.042	100.098
Apr.	99.288	92.988	102.505	99.25
May	98.335	94.512	103.107	99.548
June	98.025	94.619	104.142	...
July	96.44	94.892	102.337	...
Aug.	94.159	94.976	102.345	...
Sept.	93.313	94.054	102.435	...
Oct.	91.848	96.455	102.238	...
Nov.	89.236	98.985	100.972	...
Dec.	92.34	98.96	99.176	...
Aver.	93.672	95.069	102.03	

Quicksilver Averages

N. Y. Monthly Averages
Virgin, Dollars per 76-lb Flask

	1957	1958	1959	1960
Jan.	256.00	224.35	219.50	211.30
Feb.	256.00	229.39	219.50	212.68
Mar.	256.00	232.096	223.57	214.00
Apr.	256.00	233.06	239.52	214.00
May	256.00	229.48	245.86	214.00
June	256.00	229.00	241.64	...
July	256.00	230.25	236.74	...
Aug.	252.20	240.27	232.524	...
Sept.	243.58	241.12	225.429	...
Oct.	234.48	235.94	224.548	...
Nov.	228.33	230.05	217.944	...
Dec.	226.50	223.54	215.05	...
Aver.	248.51	230.96	228.49	..

Primary Aluminum Output, Shipments and Stocks

(U. S. Department of Interior)

	Stocks beginning of month short tons	Production short tons	—Sold or Used— Short tons	Value f. o. b. plant	Stocks end of month short tons
1958					
Total	....	1,565,556	1,595,067	.....	.....
1959					
February	175,108	142,116	133,397	65,668,578	183,827
March	183,827	157,189	181,839	82,304,609	159,177
April	159,177	155,213	182,930	90,070,280	131,460
May	131,460	163,857	182,607	89,672,327	112,710
June	112,710	167,323	191,421	93,955,552	88,612
July	88,612	179,194	187,387	91,635,864	80,419
August	80,419	172,816	159,206	77,711,678	94,029
September	94,029	168,206	153,170	74,809,052	109,065
October	109,065	173,742	151,683	73,293,070	131,124
November	131,124	153,665	152,024	74,247,828	132,765
December	132,765	162,996	184,123	89,712,146	111,638
Total	....	1,953,017	1,987,465	.....	.....
1960					
January	111,638	164,023	148,129	$73,424,794	127,352
February	127,532	156,825	167,215	83,087,192	117,142
March	117,142	170,688	172,846	88,761,065	114,984

Aluminum Wrought Products

PRODUCERS' MONTHLY NET SHIPMENTS

(Bureau of Census — Thousands of Pounds)

	Total	Sheet, Plate, Foil, Rod & Bar	Wire & Cable	Extruded Shapes & Tubing	Powder & Paste
1955 Total	**2,805,500**	**1,542,368**	**365,391**	**812,311**	**35,854**
1956 Total	**2,870,101**	**1,577,601**	**398,602**	**782,398**	**28,017**
1957 Total	2,677,423	1,396,502	399,040	789,430	28,187
1958					
Total	2,624,911	1,441,385	285,355	821,249	25,742
1959					
January	235,463	132,361	26,480	70,309	2,246
February	230,733	131,564	21,740	71,364	2,028
March	271,642	161,285	21,940	81,276	2,578
April	293,554	166,942	25,468	93,475	3,178
May	320,786	184,664	28,532	99,308	3,641
June	341,389	195,476	30,156	107,038	3,901
July	373,060	211,850	39,902	111,661	4,708
August	247,833	126,512	29,411	85,380	2,537
September	262,749	140,313	25,843	89,986	2,419
October	287,081	154,669	27,614	97,478	2,697
November	247,260	136,516	20,528	83,594	2,304
December	268,155	152,007	24,210	84,504	2,606
Total	3,397,705	1,894,159	321,824	1,075,373	34,843
1960					
January	250,116	141,060	22,475	78,674	3,370
February	256,017	147,026	22,626	79,268	2,435
March	267,149	152,580	24,682	82,584	2,180
April	294,836	166,924	25,468	94,530	3,178

Aluminum Castings Shipments

(Bureau of Census)

BY TYPE OF CASTING

(Thousands of Pounds)

	Total	Sand	Permanent Mold	Die	All Other
1954 Total	**609,066**	**155,738**	**213,968**	**232,726**	**6,800**
1955 Total	**833,058**	**171,757**	**298,115**	**354,804**	**8,282**
1956 Total	**801,036**	**171,763**	**245,421**	**376,108**	**7,736**
1957 Total	**751,656**	**144,121**	**232,326**	**369,086**	...
1958					
Total	596,790	117,421	186,949	292,599	...
1959					
January	62,927	10,907	20,606	21,349	...
February	62,846	10,627	21,127	31,021	...
March	73,351	12,412	26,964	33,949	...
April	72,976	12,700	26,153	33,992	...
May	68,268	11,979	25,283	30,877	...
June	66,471	12,306	24,927	29,092	...
July	56,911	11,581	20,410	24,786	...
August	55,904	11,130	17,824	26,818	...
September	66,193	12,309	21,506	32,239	...
October	67,499	12,958	21,781	32,640	...
November	54,557	10,813	16,326	27,303	...
December	64,939	12,409	19,902	32,523	...
Total	772,212	142,131	262,179	346,589	...
1960					
January	68,247	11,278	22,368	34,514	...
February	71,699	11,800	23,614	36,177	...
March	72,216	12,934	22,413	36,749	...

Virgin Aluminum

Ingot (30 lb.) 99½% Plus, Delivered Monthly Average Prices

(Cents Per Pound)

	1957	1958	1959	1960
Jan.	27.10	28.10	26.80	28.10
Feb.	27.10	28.10	26.80	28.10
Mar.	27.10	28.10	26.80	28.10
Apr.	27.10	26.10	26.80	28.10
May	27.10	26.10	26.80	28.10
June	27.10	26.10	26.80	....
July	27.10	26.10	26.80	....
Aug.	28.10	26.77	26.80	....
Sept.	28.10	26.80	26.80	....
Oct.	28.10	26.80	26.80	....
Nov.	28.10	26.80	26.80	....
Dec.	28.10	26.80	27.361	....
Aver.	**27.517**	**26.889**	**26.847**	....

Magnesium Wrought Products Shipments

(Bureau of Census)

(Thousands of Pounds)

	1957	1958	1959	1960
Jan.	2,130	1,271	1,271	1,535
Feb.	2,522	1,280	1,691	1,724
Mar.	2,388	1,398	1,717	1,966
Apr.	2,511	1,479	2,089	1,790
May	2,230	1,443	1,644	....
June	1,881	1,709	1,946	....
July	1,428	1,227	1,681	....
Aug.	1,540	1,823	1,823	....
Sept.	1,501	1,807	1,807	....
Oct.	1,453	1,983	2,220	....
Nov.	1,230	1,662	1,320	....
Dec.	1,102	1,622	1,675	....
Total	**21,915**	**18,702**	**20,884**	....

Cadmium Averages

(Cents Per Pound)

N. Y. Monthly Averages Cents per lb. in ton lots

	1957	1958	1959	1960
Jan.	170.00	155.00	145.00	148.50
Feb.	170.00	155.00	145.00	150.00
Mar.	170.00	155.00	145.00	150.00
Apr.	170.00	155.00	120.00	150.00
May	170.00	155.00	120.00	150.00
June	170.00	155.00	120.00	....
July	170.00	155.00	120.00	....
Aug.	170.00	155.00	120.00	....
Sept.	170.00	152.60	120.00	....
Oct.	170.00	145.00	*140.00	....
Nov.	170.00	145.00	140.00	....
Dec.	166.40	145.00	140.00	....
Aver.	**169.70**	**152.30**	**132.00**	....

* As of Oct. 1, 1959, for lots of up to one ton.

Steel Ingot Production

(American Iron and Steel Institute)

Period	Estimated Production — OPEN HEARTH Net tons	% of capacity	BESSEMER Net tons	% of capacity	All Companies ELECTRIC Net tons	% of capacity	TOTAL Net tons	% of capacity	Calculated weekly production, all companies (net tons)
1954 Total	80,327,494	73.6	2,548,104	53.2	5,436,054	52.0	88,311,652	71.0	1,693,741
1956 Total	102,840,585	91.6	3,227,997	67.4	9,147,567	81.2	115,216,149	89.8	2,203,828
1957 Total	101,657,776	87.0	2,475,138	54.9	8,582,082	71.3	112,714,996	84.5	2,161,776
1958									
Total	75,888,392	62.0	1,396,348	34.7	7,972,623	55.4	85,257,363	69.6	1,635,162
1959									
January	8,280,985	77.1	120,005	39.5	729,675	63.7	9,317,385	74.3	2,103,247
February	8,540,000	88.0	129,000	47.0	757,000	73.1	9,603,000	84.8	2,401,000
March	10,216,474	95.1	184,892	60.9	929,784	81.1	11,567,745	92.3	2,611,229
April	9,884,332	95.0	196,000	66.2	964,850	87.0	11,281,920	93.0	2,629,818
May	10,117,968	94.2	200,887	66.1	1,024,401	89.4	11,600,581	92.5	2,618,441
June	9,521,053	91.6	185,794	63.2	941,056	84.8	10,907,634	89.9	2,542,572
July	4,540,182	42.2	66,433	21.9	526,025	45.9	5,227,129	41.7	1,182,608
August	1,171,342	10.9	.....	...	267,935	23.4	1,439,277	11.5	324,893
September	1,249,398	12.0	.....	...	285,619	25.8	1,535,017	12.7	358,649
October	1,385,490	12.9	.....	...	319,043	27.8	1,704,533	13.6	384,770
November	6,290,659	60.5	92,361	31.4	754,793	68.0	7,267,607	52.9	1,694,081
December	10,468,534	92.4	205,666	67.7	1,033,668	90.2	11,989,319	95.6	2,712,516
Total	81,668,997	64.5	1,380,283	38.6	8,532,514	63.2	93,446,132	63.3	1,792,216
1960									
January	10,510,616	97.7	211,132	73.2	1,046,675	85.6	12,049,404	95.5	2,719,956
February	9,713,527	94.0	216,263	80.2	949,588	83.0	11,126,806	94.3	2,687,634
March	10,103,122	93.9	202,812	70.3	952,008	77.9	11,564,683	91.6	2,610,538
April	8,603,306	82.7	105,336	37.7	766,452	64.8	9,777,857	80.1	2,279,221
May	7,844,000	72.9	73,000	25.3	605,000	49.5	8,832,000	70.1	1,994,000

Blast Furnace Output

(American Iron and Steel Institute)

	net tons Pig Iron	Ferro-manganese & Spiegel	Total	% Capacity
1951				
Tl. Yr.	70,487,389	745,351	71,232,761	93.3
1952				
Tl. Yr.	61,828,668	629,926	62,158,591	84.2
1953				
Total	74,987,721	855,038	75,842,759	95.5
1954				
Total	58,119,382	568,735	58,688,117	71.6
1955				
Total	77,114,073	868,758	77,980,831	92.7
1956				
Total	75,301,134	664,341	75,965,475	88.9
1957				
Total	78,557,011	782,660	79,339,671	91.4
1958				
Jan.	4,785,269	69,175	4,854,444	62.8
Feb.	4,016,276	47,953	4,064,229	58.2
Mar.	4,418,778	45,175	4,463,953	57.8
April	3,787,907	39,302	3,827,209	51.2
May	4,048,328	25,468	4,073,796	52.7
June	4,396,285	26,463	4,422,748	59.1
July	4,277,515	26,668	4,304,183	55.7
Aug.	4,799,955	31,374	4,831,329	62.1
Sept.	5,041,042	31,348	5,072,390	67.8
Oct.	5,835,995	36,963	5,872,958	76.0
Nov.	5,907,888	39,275	5,946,163	79.5
Dec.	6,025,385	47,505	6,072,890	78.6
Total	57,298,644	465,456	57,298,644	63.5
1959				
Jan.	6,260,395	48,572	6,211,823	77.9
Feb.	6,047,398	45,274	6,192,672	85.3
March	7,461,760	48,291	7,510,051	93.4
April	7,338,372	54,234	7,392,606	95.0
May	7,683,759	64,237	7,747,996	96.4
June	7,231,631	58,315	7,289,946	93.7
July	3,550,159	23,391	3,573,550	44.5
Aug.	.....	....	947,779	11.8
Sept.	.....	....	949,103	12.2
Oct.	.....	....	1,017,659	12.7
Nov.	4,199,101	20,172	4,219,273	54.2
Dec.	7,638,359	65,728	7,704,087	95.0
Total	60,322,426	452,313	60,774,738	...
1960				
Jan.	7,753,753	76,344	7,830,097	95.5
Feb.	7,342,469	71,533	7,414,002	...
March	7,713,696	79,715	7,793,411	95.1
April	6,770,229	69,864	6,830,093	86.1
May	6,030,992	63,419	6,394,411	78.0

Steel Castings Shipments

(Bureau of Census)

	(Short Tons) Total	For Sale	For Own Use
1951	2,101,604	1,507,413	594,191
1952	1,925,116	1,476,352	448,767
1953	1,829,277	1,290,016	431,330
1954	1,184,096	880,158	303,938
1955	1,530,694	1,166,706	363,988
1956	1,931,987	1,512,290	416,697
1957			
Total	1,766,191	1,261,301	406,444
1958			
Mar.	106,233	82,195	24,038
Apr.	91,464	69,121	22,343
May	87,002	66,086	20,916
June	92,681	71,624	21,237
July	68,802	48,618	10,184
Aug.	80,886	59,816	21,070
Sept.	85,277	64,586	20,691
Oct.	95,389	73,367	22,022
Nov.	85,267	65,788	19,479
Dec.	103,800	81,360	22,440
Total	1,114,939	859,125	255,814
1959			
Jan.	105,392	82,693	22,709
Feb.	110,280	86,013	24,267
Mar.	131,317	103,848	27,469
Apr.	134,344	104,890	29,454
May	135,359	105,804	29,555
June	143,624	111,725	31,899
July	106,790	83,541	23,249
Aug.	98,014	79,188	18,826
Sept.	99,731	79,963	19,768
Oct.	105,570	84,850	20,720
Nov.	109,460	86,026	23,434
Dec.	103,800	81,360	23,440
Total	1,023,861	919,181	294,430
1960			
Jan.	122,565	94,052	28,513
Feb.	129,259	97,927	31,332
Mar.	143,708	109,688	34,020

Galvanized Sheet Shipments

(American Iron & Steel Institute)

(Net Tons)

	1957	1958	1959	1960
Jan.	235,902	186,649	279,244	323,073
Feb.	205,048	167,627	281,637	289,583
Mar.	206,836	195,885	311,961	329,395
Apr.	198,585	206,368	328,759	295,627
May	206,657	231,318	317,059	
June	239,037	277,180	350,333	
July	167,247	239,883	180,787	
Aug.	186,790	253,263	N.A.	
Sept.	183,952	258,723	N.A.	
Oct.	212,886	290,157	N.A.	
Nov.	190,380	253,909	196,644	
Dec.	159,363	266,472	301,911	
Total	2,392,637	2,828,848	2,772,835	

N.A.—Not available.

SHIPMENTS OF TIN-TERNEPLATE

(American Iron & Steel Institute)

(Net Tons)

	—Hot Dipped— 1959	1960	—Electrolytic— 1959	1960
Jan.	30,304	32,525	417,210	493,828
Feb.	24,602	29,385	442,625	443,619
Mar.	46,705	38,131	597,408	538,166
Apr.	54,906	37,106	689,998	470,716
May	64,110	....	689,064	....
June	62,965	....	673,819	....
July	36,381	....	244,719	....
Aug.	N.A.	....	N.A.	....
Sept.	N.A.	....	N.A.	....
Oct.	N.A.	....	N.A.	....
Nov.	21,782	....	296,641	....
Dec.	31,487	....	464,080	....
Total	412,123	....	4,858,511	....

N.A.—Not available.

Steel Ingot Operations

(Precentage of Capacity as Reported by American Iron & Steel Institute)

Week Beginning	1957	1958	1959	1960
Jan. 4...	98.4	56.1	76.2	95.3
Jan. 11...	96.4	57.0	73.6	95.7
Jan. 18...	96.6	55.5	74.6	95.4
Jan. 25...	97.6	54.0	72.6	94.2
Feb. 1...	97.1	54.0	76.9	94.3
Feb. 8...	97.7	53.5	83.8	95.7
Feb. 15...	97.8	50.9	83.7	93.8
Feb. 22...	96.0	54.6	88.5	94.4
Feb. 29...	97.1	53.1	90.3	92.8
Mar. 7...	93.8	52.4	92.0	93.1
Mar. 14...	93.5	52.5	92.9	91.5
Mar. 21...	92.4	50.6	92.9	91.1
Mar. 28...	90.6	48.6	93.2	88.7
Apr. 4...	90.3	48.5	93.3	84.8
Apr. 11...	90.4	46.8	93.8	78.1
Apr. 18...	88.7	47.9	93.5	78.5
Apr. 25...	87.0	47.8	94.2	77.6
May 2...	86.7	49.4	92.0	75.0
May 9...	84.2	52.3	92.9	73.8
May 16...	86.4	56.4	93.4	71.3
May 23...	88.0	58.1	93.6	65.6
May 30...	87.5	62.5	93.7	60.6
June 6...	86.5	84.0	92.0	61.6
June 13...	85.2	64.9	92.5	62.3
June 20...	84.0	61.7	87.8	...
June 27...	78.5	51.0	78.2	...
July 4...	78.7	53.4	79.5	...
July 11...	79.3	54.9	38.7	...
July 18...	79.4	57.3	12.9	...
July 25...	79.4	57.8	12.2	...
Aug. 1...	79.8	58.8	11.2	...
Aug. 8...	80.6	60.5	11.8	...
Aug. 15...	82.1	62.6	11.3	...
Aug. 22...	82.2	63.5	11.7	...
Aug. 29...	81.0	61.7	11.5	...
Sept. 5...	81.9	65.9	11.6	...
Sept. 12...	82.1	65.6	12.6	...
Sept. 19...	82.2	67.3	12.8	...
Sept. 26...	82.6	70.4	12.8	...
Oct. 3...	82.8	71.6	12.8	...
Oct. 10...	80.9	74.2	13.0	...
Oct. 17...	80.2	74.8	13.1	...
Oct. 24...	79.7	75.0	13.1	...
Oct. 31...	78.0	74.5	13.0	...
Nov. 7...	77.7	74.5	45.6	...
Nov. 14...	76.0	74.1	78.9	...
Nov. 21...	72.1	73.7	89.7	...
Nov. 28...	71.5	73.5	93.6	...
Dec. 5...	69.2	73.5	96.5	...
Dec. 12...	67.7	74.5	96.3	...
Dec. 19...	53.7	74.5	94.9	...
Dec. 26...	59.0	73.6	96.3	...

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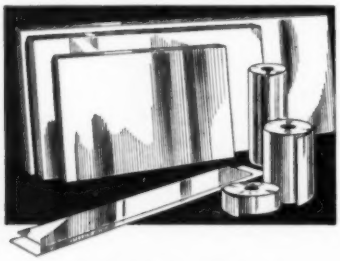

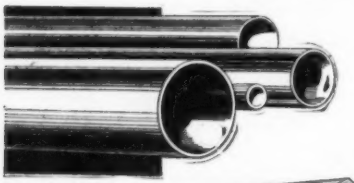

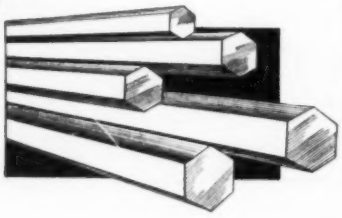

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